The Builder.

VOL. XXXII.—No. 1664.

Retrospective.

LANCING backwards it will be seen, that during 1874, several of those subjects which, at the commencement of the year, menaced us with so many distinct centres of disturbance, have gradually sunk more nearly to the level of rational and useful discussion. In the matter which, perhaps more closely than any other, concerns the future welfare of this great country, namely, the relation between the labourer, in every department, and the employers and supporters of labour, while the year has seen its fights and its struggles, they have resembled the waves of a sinking, rather than of a rising, tempest. The great experiment as to agricultural labour has not had the result that was anticipated by many. In fact, it may be thought that more good than evil has arisen from the agricultural contests of the year. For while the farmers and employers of labour have had ample and unmistakable warning that they must, both in money payment and in general attention to the wants and comforts of those whom they employ, rather exceed than fall short of the bare demands of justice, the labourer has learnt much. He has been shown that all is not gold that glitters; that there is a crook in every lot; that the golden tales of the fairy lands that await him, if he can only cross the ocean, have an ugly reverse; that even migration from his own county to another, in which the rate of wages is higher, is not an unmixed advantage to the emigrant. While very much is yet to be desired on both sides, the prospect of a just, peaceful, and honourable adjustment of agricultural relations is brighter than it was. Meantime, none of us should close our eyes to the mode in which the engineer is throwing his sword, or rather his hammer, into the scene; we mean to the annual improvement and extension of labour-saving machinery applied to the purposes of agriculture.

A matter which has been almost more at heart with a large body of our friends and supporters than the labour dispute, we mean the sanitary question, has made, during the year 1874, a certain amount of progress. We take no merit to ourselves for foreseeing, at the commencement of the year, the turn which all public affairs were about to make. But we did see enough, as our readers will bear us witness, to counsel those of our friends who were eager to come to Parliament to make up for the loss of the great opportunity that had been thrown away by the draughter of the last Sanitary Bill, that 1874 would be no time for sanitary legislation. Such, indeed, turned out to be the case. While fully admitting that very much remains to be done, we cannot but regard with satisfaction the evidence constantly accruing of the extension of knowledge of sanitary matters amongst the public at large. At times, indeed, we may regret to see points of pure theory, such as the question of "germs," discussed with as much heat as if great practical results depended on the immediate adoption of one or other of the purely medical hypotheses. But if the matter be regarded in a practical light, the disputants are only renewing the case of the quarrel about the gold and silver shield. We know, and the public is clearly becoming more possessed of the knowledge, that fever is a constant attendant on neglected drainage. Whether that fever spring from "germs," conveyed in some manner from former patients, or whether it be a self-sprung malady, to which the depression of vital energy, produced by the vapours of neglected drainage, mainly contributes, does not matter a single farthing to the sanitary engineer. His duty is simple and plain: he knows that pure water and pure air are requisite for health; and his labours to assure those requisites are in no way dependent on either a positive or negative view of the doctrine of "germs," nor can these requisites be allowed to stand over for the discussion of minute and possibly insoluble questions of vital chemistry.

One of the great subdivisions of the Sanitary theory, the prevention of the pollution of rivers, has been brought very fully before the public attention, at the close of 1874, by the Society of Arts. It is satisfactory to observe how, on this occasion, the divergent and opposing views of different sections of sanitary reformers were expressed with so much mutual considerance and respect. Exaggerated ideas of the value of the chemical elements of sewage have been tacitly abandoned, and it has been rather to the subject of the positive injury occasioned to our rivers and streams by converting them into sewers, than to the supposed loss of profit thus accruing, that practical attention has been turned. In the further efforts, in which we shall be happy to bear our part for this important object, we are anxious that these things should be borne in mind. The first is, that a well-devised system of irrigation is at once a sanitary facility, and a source of wealth. Secondly, the economic value of the rivers of the country as fishing grounds, if restored, is of a high order. Third, that any efficient dealing with the question must provide for the purchase and demolition of a considerable number of water-mills, which are the occasion, both of water-logging large areas, and thus rendering them unproductive, and of preventing irrigation in other districts, on the plea of the right of the millowner to the entire water power. The introduction of steam mills, which, in some places, occupy the very premises of the old and disused, or partially disused, water machinery, will facilitate that great engineering reform, than which few things will be more conducive to the public health.

In the special pursuits of the architect and the builder a general and active industry has met with but little check during 1874. We took occasion to show how steady and rapid has been the increase of some branches of this activity; we mean the erection of houses and the building and rebuilding of churches. Annual returns, on this latter subject, are greatly to be desired. Taking decennial periods, we have seen what is the average rate of increase; and in pointing out that the statement that we now build two churches, from foundation to spire, every week, is now under the mark, we show reason for the assertion that, at no period of history, have so many churches been built in one European country, within a year, as has been the case in England, in 1874. Restorations and renewals, which are not included in this goodly count, are at times even more important than are new buildings. *Apropos* of this subject of rebuilding we may mention the unusual case of the demolition of a church which had been entirely rebuilt within less than forty years; but in which the want of foresight had made no provision against the encroachments of damp, from the winter overflow of the river Wye, and in which heavy projecting galleries, instead of adding to the available area of the church, destroyed the utility of those portions of the nave which they oppressed. We refer to the parish church of St. Nicholas at Guildford; where an enlarged and well-designed structure is now rising on the old site, including the interesting mortuary chapel of the ancient family of which Sir Thomas More was a member.

Amongst the details of ecclesiastical architecture, so far as literature is concerned, for which the year will be memorable, the foremost place must be assigned to the proposals for the decoration of St. Paul's. It was with much regret that we found ourselves compelled to oppose the projects of an able and eminent architect. The views which we put forward have, since, been advocated by other pens. The voice of the public has been so unmistakably in favour of our view of the matter, that the features which we condemned are now no longer under discussion.

The year 1874 has witnessed the beginning and the end of two characteristic buildings, the demolition of which will yet further change the face of London. Northumberland House is dismantled, and in course of destruction, and Temple Bar looks like an invalid on his last legs. On the other hand, the long-crying scandal of Leicester-square has been removed. Our columns have described the garden which has replaced that disreputable wilderness.

Another important architectural feature of the past year has been due to the action of the various School Boards throughout the country. The various systems practised in America, Austria, Prussia, Belgium, France, Switzerland, Sweden, have all been studied by English architects, and some notice of the result was given in our number for the 30th of May (p. 451, *ante*), as well as elsewhere in our volumes. By the close of 1873, as there mentioned, eighty-six new schools were either completed or under weigh. The number of 800 children was proposed as that for which it was usually most desirable to provide in one school, in order to avoid the necessity of the little creatures having to walk too long distance from their homes. Attention may be recalled to the fact that, in Sweden, gardening forms a part of the educational system.

Of the public and private buildings completed or commenced in 1874, we have, from time to time, given descriptions, and, frequently, views. Among these we recall our notices of St. Stephen's Club, Westminster,—Mr. John Whichcord, architect; the National Training School of Music, Kensington,—designed by Lieut. Cole; the block of buildings, comprising Hotel and Shops, adjoining the Holborn Viaduct,—Mr. E. Evans Cronk, architect; the New Billingsgate Market, fronting the river Thames, now being erected by the Corporation of the City of London, from the designs of Mr. Horace Jones; specimens of street architecture at 48, Cheapside,—Mr. R. L. Roumieu, architect; and at 74, Cornhill—Mr. Thomas S. Smith, architect; these are metropolitan buildings. In the provinces we may recall the restoration of the church of St. Mary Redcliff, Bristol, of which we gave a view; Nutfield Priory, built for Mr. Joshua Fielden, M.P.,—Mr. John Gibson, architect; the Manchester Aquarium,—Mr. M. Seanor, architect; the Mortuary Chapel of Mr. Digby, of Sherborne Castle, erected in the cemetery of Sherborne, Dorset, of which we figured the portal, the design of the late Mr. W. Slater; the Star and Garter Hotel, Richmond,—Mr. C. J. Phipps, architect; the Manchester Conservative Club-house,—Messrs. Horton & Bridgford, architects; the Reredos in Exeter Cathedral, which has been the subject of so much litigation,—Sir G. G. Scott, R.A., architect; the Reredos, Worcester Cathedral, by the same architect; and the Memorial Pulpit, Peterborough Cathedral,—Professor Barry, R.A., architect. Out of England we have had to mention the new Clock Tower at

Delhi,—Mr. E. J. Martin, architect; the Public Works Offices, Bombay,—Col. St. Clair Wilkins, R.E., architect; as well as the design by Mr. Thomas Tilley, for the New Court House and City Hall, Chicago. We have also reproduced some choice examples of foreign architecture, such as the graceful Tower of the Protestant Church at Breda, finished late in the fifteenth century; the church of St. Thegonnec, Finisterre, the most perfect example of a Breton church; where the churchyard includes also a "Calvary," triumphal arch, ossuary, and Cemetery Chapel; the dream-like pile of the Abbey of Mont St. Michel, which looks like a creation by Gustave Doré; and the Choir of the Cathedral of Tournay, a noble work of the thirteenth century; and the rich and varied details of the exterior of the church of Wetzlar, in Germany, probably dating from the twelfth century, and now in a dangerous condition; while on the subject of ecclesiastical buildings we must not forget the Bells and Carillon-machine of Worcester Cathedral.

In regarding the efforts made to spread, in this country, the knowledge of foreign art, whether fine or industrial, we may recall the fact that our predictions have been fulfilled by the announcement that the International Exhibition of 1874 was the last of the proposed "perpetual" series. Thus a renewal, at proper intervals, of the invitation of Europe to send us specimens of her workmanship we look forward to with much more satisfaction now that the undue strain of constant effort is taken off. Meantime, various matters have been suggested, for which the unoccupied galleries at South Kensington might afford at least a temporary home. We hope that in discussing them it will not be forgotten that the light obtained within them is especially favourable to the display of sculpture. No public building exists in the metropolis which is so advantageous for this important object. Many of our finest pieces of sculpture are now presented to the public under circumstances as favourable to their effect as are the footlights of the stage, when glaring on the features of an actor who approaches too closely to the reversed illumination. If sculptors of all orders, from the artist in marble to the delicate craftsman who produces such exquisite *rilievi* for the master-pieces of Messrs. Elkington, from the carver of wood to the moulder of vigorous sketches in clay, could only be induced to come together, and form a sculptors' institute, here would at least be a favourable spot for their first exhibitions of their work.

Research into the art of the past has won a signal triumph in the discovery of the treasure at Hissarlik. It is possible that the impetus thus given to the labours of the archæologist may prove even more important than the actual value of this discovery. In more than one direction we are turning back pages of ancient history that have long been considered to be altogether obliterated. We trust that we are only at the commencement of a brilliant epoch of discovery. In Palestine the year has not added to our knowledge so much of a purely architectural nature as did the work of 1873. But on the other hand the survey has been pressed forward swiftly, steadily, and exhaustively. Every vestige of building has been noted; every building of any importance has been accurately surveyed. The identification of the Old Testament sites has been pursued with very ample success; and enough of the work of Lieut. Conder has already reached this country to make it plain that the description given by certain critics of the Book of Joshua as a late, or fabricated, work, is about as sensible as would be the annunciation of an opinion that Domesday book was got up by Oliver Cromwell. The identification of the walled and levelled areas at the three historic points on which the Tabernacle was successively reared, during the 480 years that preceded the erection of the Temple of Solomon; and the discovery of the walled block, on the lofty summit of Kum Sartabeh, which Lieutenant Conder identifies with the site of the memorial reared by the two and a half tribes on the return to their transjordanic possessions, in the year 1486 B.C., are striking instances of the success with which the sounding line of patient research can be thrown back into the depths of the historic past.

The memorable shock sustained by the north-western district of the metropolis from the explosion of a mixed cargo of petroleum and gunpowder on the Regent's Canal has awakened serious attention to the defective state of the law as to the storage and transport of large quantities of explosive substances through cities and towns. The danger had, indeed, been pointed out clearly before; but the warnings had been neglected by the public, and thereby the Legislature of 1875 will, it is to be hoped, be led to see some proper regulations introduced on this subject. In its discussion it would be well to bear in mind that the observed effect of the damage caused by explosions in Continental towns is no measure of the ruin that would be wrought in our own. In many, if not most, parts of the Continent, and eminently in all such localities as have experienced the shock of earthquake, the strength of the houses is far in excess of that commonly thought sufficient by our builders. Meantime, applications have been made to the courts of law for redress, as against the Canal Company,—a fact that may possibly afford a safeguard to the public more speedy, if not more effective, than that which is demanded from Parliament.

The question of the supply and storage of water, and the provision against drought,—one that has often received earnest attention in our pages,—has been brought prominently forward by the Society of Arts, towards the close of the year. It is one to which we shall probably have occasion to revert in the year about to open.

After a delay which the voluminous and complete character of the information just supplied to the public goes far to justify, the reports of the Great Vienna Exhibition of 1873 have been issued in four bulky volumes. We have had nothing of the like importance since the reports of the last Exhibition at Paris. It is gratifying to observe the high testimony borne on all hands to the ability and energy of Mr. P. C. Owen, the secretary to the Commission. The report, which bears the signature of H.R.H. the Prince of Wales, followed by fourteen other well-known names, attributes to the "tact and indefatigable industry" displayed by Mr. Owen, "in no slight measure, the successful issue of the labours" of the Commission. "We have reason to know," it concludes, "that the high opinion which we have formed of Mr. Owen is shared by all those with whom his official position brought him in contact."

Finally, glancing at the literature of architecture, as brought before the world in the past year, we think that there is reason for some satisfaction. The unmeasured and ignorant attacks that have been made, in quarters to which we have felt it proper to direct attention, on the state and on the members of the architectural profession, have received, in many instances, a reply that has not been the less conclusive from its tacit and unruffled character. On the other hand, let us all remember the ancient wisdom that teaches us that it is lawful,—and *fas* means something more than merely allowable,—to learn from a foe. In that careful and intelligent study, both of the example and of the principles of the great architects and artists of the past, which is yearly being rendered more facile for those of the present, lies a more rational and hopeful ground for expecting a steady and satisfactory progress than in the use of rhetorical antitheses, or, indeed, of plain-spoken abuse, as an element of reform; or in hysteric appeals to the "inspired workman" who has yet to be discovered. We have seen with how sustained and lengthened a stride the building of the year 1874 has added to the national wealth and picturesque beauty of England.

We heartily wish our readers, now more numerous than at any former time, a happy new year.

TEMPLE BAR AND THE NEW LAW COURTS.

The further discussion of the ultimate fate of Temple Bar, and the prospective re-arrangement of the locality, at the recent meeting of the Court of Common Council, brings the question forward in a form of so much importance that it may be well to consider it in some of its artistic and other bearings. The resolution of the Council was certainly a wise one,—to do nothing until all the aspects of the matter could be viewed in relation to the different interests to be consulted, the concurrence and combined action of three public bodies, at least, with that of private owners, being required upon a definite and well-considered plan to carry out satisfactorily what may be made a fine public improvement, not less from a utilitarian point of view than from an architectural one; presenting, as it does, an opportunity for obtaining a *coup d'œil*, which it is to be hoped may not be lost or spoiled, as has so often been the case with our public works.

The question cannot be viewed apart from the New Law Courts, which, as was pointed out, will be set back 10 ft. from the present line of frontage, and it seems to be taken for granted that there will be some widening of the thoroughfare on the opposite side (the desirability of which cannot be doubted), and the consequent re-building of the elevations. These considerations alone virtually settle the question of the Bar in its present site and form, to say nothing of the incongruity of its architectural character with that of the New Law Courts, and we can scarcely bring ourselves to believe that the whimsical design referred to at the Court,—and which was previously before the public,—of hoisting the Bar over an archway spanning the thoroughfare, can have been received with favour in any serious sense. One fact seems to have been entirely overlooked, that the Law Courts buildings will run *eastward* of the present line of Temple Bar some 80 ft., so that it is difficult to see how any such design as the one referred to could be carried out without interfering with the Courts, not to allude to the wonderful architectural combination which would be created by the contrast of the Gothic style of the Courts and the Classic,—if such it must be called,—of the arch with the Bar at the top! The suggestion in connexion with this plan of making it a bridge of communication between the Courts and the Temple for the use of the public and the legal profession is not a new one, it being common to some of the designs sent in at the Law Courts Competition, and which, if properly carried out contains the germ of what may prove the best thing to be done.

There seems, then, to be no alternative to removing the Bar from the widened thoroughfare and leaving the latter entirely open (which would be preferable to any attempt at retaining the present structure in any shape, form, or combination), or such an arrangement in connexion with the New Law Courts as would be at once an improved substitute for the Bar should the City authorities ultimately determine to preserve their boundary,—provide for all the facilities of a bridge of communication in the best form, and be in itself an architectural combination of a fine character. Our readers will remember that at the time of the publication of Mr. Street's amended designs we were unable to offer them that unqualified approval which we could have desired, and that we then gave our reasons for thinking that they fell short of the dignity and importance which the character of the buildings demanded,—the Strand front especially,—as wanting cohesion in the general design, as well as here and there having features largely open to emendation, and this objection we must reiterate. We were, however, and are sincerely anxious for the artistic success of the buildings, and if, as has been predicted, the Law Courts are likely to be the last public buildings erected for some time to come of much importance in the Gothic style,—the tide having turned again in favour of some forms of Classic,—it is the more incumbent that no opportunity should be lost for rendering them as satisfactory as the national pride can desire. It is for this reason that we think the question of Temple Bar affords a favourable oportunity for the reconsideration of some points in connexion with the New Law Courts, as to which it is now well known that the architect is suffering from the hampering effect of a false economy, at the dictate of authority, and has been compelled to sacrifice features of importance. And here it may not be amiss, generally, to say that if the official history of our public buildings could be written, it would be found that when the outcry has been loudest against an architect, it may, as a rule, be taken for granted that it is more his misfortune than his fault, and that he is pretty well the helpless victim of official influences and interferences, which not only dishearten the architect, but too often burke the fairest features of his work. There is hardly a public building which would not afford some instance of this, and notably those of most modern erection. In regard to the Law Courts, the relinquishment of everything in the shape of a commanding tower,—one such having been proposed for the north-west angle of the buildings,—was a misfortune architecturally, and not less so, and with far less reason, was the giving up of the *flèche* or stone lantern to the central hall, such a feature being in every sense wanted, both externally and internally; and it is to be hoped that this will be so perceived that the decision to expunge

it may be reversed by Parliament. There is, however, a tower left to the architect, and it is this which forms the point of connexion with the Temple Bar question. In the discussions as to the Bar, and the comments of the press, it seems to have been overlooked that this tower will extend within the City boundary east of the position of the present Temple Bar, or as nearly as possible be in a line with it. What, then, we would suggest is that the architect, on the basis of a well-matured plan between the authorities and the parties interested in the widening of the thoroughfare and the rebuilding of opposite or contiguous elevations—should be allowed to re-design his tower as a more commanding and important feature for obtaining greater cohesion for his building as a whole, and thus, with the *flèche* to the central hall above alluded to, redeeming it from the scattered aspect which such an assemblage of buildings must present without dominating portions of an imposing character. In connexion with this tower, and, it might well be, as issuing from it the proposed substitute for the existing Temple Bar could be arranged in the shape of a handsome Gothic bridge spanning the Strand and carrying over it a gallery communication, or continuous corridor, it being essential that it should be a *covered* way, not open to the weather, as was the case in the plan above alluded to. Such a communication has all along been regarded as likely to prove a great boon to the legal profession, and frequenters of the Courts, and it could certainly be made both internally and externally a striking architectural feature in combination with congruous elevations and surroundings, which ought to be carefully attended to. We cannot but think that much would be gained to the architecture of the Courts if these suggestions are adopted, although some alteration in the centre of the façade would still require making, and the question of Temple Bar would thus be met in a manner both utilitarian and artistic in a considerable degree; besides giving both to the City proper, and London generally, an architectural combination of which it does not now possess an instance. Either some such plan as this must be adopted in a style accordant with that of the Law Courts, if any substitute for Temple Bar is to be provided, or the idea should be wholly abandoned, and the thoroughfare left entirely open; for it is monstrous to suppose that any such incongruity as the thrusting up of Temple Bar in the way suggested, or any similar antagonism of style and plan, could possibly be perpetrated, accustomed, as we so ruefully are, to every kind of *fiasco* in connexion with our public works.

ON "THE HOPE OF ENGLISH ARCHITECTURE."

ROYAL INSTITUTE OF BRITISH ARCHITECTS.*

THE *Quarterly Review* has informed the world that, in old churches and cathedrals, the design was obviously done by the workman; in fact, that there is no record of design at all.† This is a strange error. Under the word "Drawing," in the "Dictionary of the Architectural Publication Society," is a list of the earlier designs and drawings scattered about Europe. On the 19th of November, 1860, Mr. Burges read a Paper‡ upon the subject to the members of this Institute. In it he said, "that nothing whatever is known of the architectural drawings of the Greeks and Romans. The *lapides Capitolini*, containing a plan of Rome, are simply inscribed in marble, and formed anciently part of the pavement of the Temple of Romulus and Remus; and the light and beautiful architecture painted on the walls of Pompeii was never resolved into materials. Our series of drawings, then, opens with the Monastery of St. Gall, now preserved in the library of that establishment. The plan, which is drawn in thin red lines upon a large sheet of parchment,—with inscriptions all over it, showing the uses of the different parts of the building,—was sent (as one of the said inscriptions informs us) for the use of the Abbot Gospertus,§ by some anonymous friend, who is supposed to have been Eginhard, the son-in-law of Charlemagne, and who held the office of prefect of the royal buildings. The plan presents us with a very complete monastery, with its great church and accompanying buildings. The red line not only seems to mark the external and party walls, but also to indicate the furniture,—such as benches, tables, stoves, &c., requisite to each building. Certain figured admeasurements enable us to form some idea of the sizes of the various parts. A view of the church and monastery of Canterbury, contained in the illuminated Psalter of Eadwin, is preserved at Trinity College, Cambridge. It is curious as showing the complete development of the practice of drawing elevations upon plans, as at St. Gall. In all probability such documents would not be very common; and, when the work was done, the erasing knife would be brought into use, and the parchment, which was very valuable in those days, would receive a new employment. That this was the case, we know, from the discovery, made by MM. Varin and Didron, in 1838, of a design for the west end of a cathedral, besides several details, which they found under the writing of a manuscript containing a list of the deceased members of the cathedral chapter of Rheims." The last entry was dated 1270. The drawings, says Mr. Burges, had been first washed out, then scraped over, the lines obliterated with a knife, and, finally, the parchment was cut into leaves.

Most archæologists have examined the celebrated sketches of Wilars de Honecort, an architect of the thirteenth century, the *facsimile** of whose sketchbook was published in Paris under the superintendence of MM. Lassus and Quicherat; and a translation of it, edited by Professor Willis, was published in London in the year 1859. Mr. Burges remarks a peculiarity of Wilars, which was, "that when he copied any executed work, he copied it not as he saw it, but with variations of his own, and as he would execute it himself." In his remarkable sketchbook, Wilars de Honecort wrote under a particular drawing, "This shows the elevations of the chapels of the church of Rheims; like them will be those of Cambrai, if they be built." Now the sanctuary of Cambrai, the construction of which was directed by Wilars de Honecort, was destroyed at the great revolution; but in 1824 the architect of the city, M. Aimé Boileux, was enabled to make a complete plan of the foundations, and this plan coincides exactly with that given in the MS. of Wilars de Honecort. Against another sketch is written, "This is one of the windows of Rheims; when I drew this I was under orders to go to the land of Hungary." Wilars de Honecort was the contemporary of Peter de Corbie, another master of the thirteenth century, who directed the construction of several churches in Picardy. They composed together a church upon an original plan, which is described by Wilars in the sketchbook as "a church with a double circumscribing aisle, which Wilars de Honecort and Peter de Corbie contrived together." During the middle ages, in parts of Western Europe, a building called *de l'œuvre* was attached to large religious edifices, which was used by the architect and the master-workmen; but the title of architect was not given to an artist engaged in the direction of building works until the sixteenth century. He was called the *maître-de-l'œuvre*,† or master-of-the work—a much more positive appellation than that of architect, which means only arch-workman; for by *œuvre* was meant everything movable and immovable in a building, from the foundations to the tapestry and furniture. The *œuvre* of Notre Dame, at Strasbourg, has preserved the Mediæval custom; and, there, may still be seen a part of the designs upon parchment, which served for the execution of the portal, tower, spire, north porch, throne, and organ case. Among the drawings are some which date from the last years of the thirteenth century; some are only designs which have not been executed; others are details prepared to be worked out full size upon the ground or against a wall, exactly as is now done by the master-workmen in France. There are plans of different floors of the tower and spire which date from the fourteenth century; and M. Viollet-le-Duc adds that these are drawn with a knowledge of line, a precision and judgment of projection, which give a high idea of the science of him who drew them.

There is a curious document extant of the fourteenth century which affords precise information concerning an architect's functions, and in which there is mention of two Frenchmen being employed to direct the construction of Gerona Cathedral in the north of Spain; this is a translation:*—

"The Cathedral Chapter of Gerona in 1312 decided to replace the old Romanesque church by a new one, larger and worthier. The works were not immediately begun, and two administrators of the work, Raymond de Viloric and Arnauld de Montredon, were appointed. In 1316 the works were in full activity, and the name of an architect, Master Henri de Narbonne, is inscribed upon the capitular register. He died, and his place was taken by one of his countrymen, named Jacques de Favariis, who engaged to come to Gerona from Narbonne *six times a year*, and the Chapter guaranteed him a salary of 250 sueldos a quarter."

This positive evidence of the existence in the fourteenth century of "a class of men who were not workmen, but really and only superintendents of buildings," has been referred to by Mr. Street in his valuable book on "Gothic Architecture in Spain.† The *Quarterly* Reviewer has quoted both Mr. Street's words and part of the extract from the Gerona Register, but, as may be readily imagined, he attaches little importance to either. Mr. Street also refers to one Mattheus, master-of-the-work at Santiago Cathedral, from 1168 to 1188, who, by a warrant issued by King Ferdinand II. in 1168, was granted an annual pension for the rest of his life; and this, as Mr. Street remarks, proves "somewhat as to the degree of importance" he attained in being thus recognised by the king. The title of "Fabricator" in Spanish inscriptions is sometimes, though rarely, given to the architect, who is usually described as "magister operis." At Rheims there is an inscription referring to the cathedral, and also to a neighbouring church, which runs,—"Ci gît Robert de Coucy, maistre de Notre Dame, et de Saint Nicaise, qui trépassa l'an 1311." In the Baptistery at Pisa, in Italy, there is an inscription,—"Diotisalvi magister hujus operis." But in England, according to Mr. Wyatt Papworth,‡ the term master-of-the-work appears to have been seldom employed; and when used, it referred rather to the officer called in Spain and the South of France, "operarius," than to the architect. And here I would say a word about the title, "operarius." In the extract from the register of Gerona, which I have just quoted, the two administrators of the work are called "operarii"; and twenty years afterwards, in 1340, the Chapter of Gerona appointed two of their own body,—one an archdeacon and the other a canon,—to be the "operarii" of the works. In the celebrated Museum of Toulouse there are preserved several stones bearing inscriptions,—one recording the name of the Canon Arnaud Rufus, who bore the title of "operarius" of the Chapter, and who died in 1251; and another of Bernard de Succo, priest, canon, and "operarius" of the Chapter of St. Sernin, who died in 1201. There is also in the same museum, No. 681, a bas-relief in white marble, consisting of six figures and the following inscription:—"Anno Domini MCCLXXXII, XVI kalendas augusti illustrissimo Philippo rege Francorum reverendissimo et valentissimo Bertrando episcopo tolosano obiit magister Aymericus canonicus, cancellarius et operarius ecclesie Tolosane cujus anima requiescat in pace. Amen." There is also a seal (No. 1,034). It is of copper, and bears a head of the Virgin; St. Peter standing and holding a key: before him is a monk on his knees, his hands clasped, and his head crowned with a star of eight rays. The inscription is,—"+ S ROBTI OPERARII ET MOACHI ECXIEN" (*Scel de Robert, ouvrier et moine d'Eysses*). Now the *Quarterly* Reviewer complains that Mr. Street gets confused with his nomenclature; so I think it may fairly be inquired of the former as to the meaning he attaches to the Latin word *operarius*. Literally it means a workman, a slave bred to hard work. Are we to suppose, then, that in the thirteenth and fourteenth centuries archdeacons and canons contributed manual labour, as well as clerkly

* By Mr. William H. White, Fellow. Read at the Ordinary General Meeting, held on Monday, the 14th instant. See p. 1044, *ante*.

† "State of English Architecture," p. 305.

‡ Transactions: Royal Institute of British Architects, 1860—61.

§ This abbot began to rebuild the church and monastery in 829.

* In the Institute Library, where it may not be inopportune to add, almost every important work upon Architecture published in Europe is carefully stored; and it is, perhaps, not generally known that any amateur with a note from a member can make use of it.

† Article "Architecte," M. Viollet-le-Duc's Dictionary, page 113. In the French portion of Hamilton and Legros' Dictionary, the churchwarden's pew is called *œuvre*, a parish vestry-board is also called *œuvre*, but the more modern designation of the latter is *fabrique*.

* Extracted from the register entitled, "Curia del vicariato de Gerona, liber notularum, ab anno 1320 ad 1322," folio 48. (Archives, Gerona Cathedral.)

† "Gothic Architecture," ch. xxi. G. E. Street, R.A. Murray, 1865.

‡ See a paper "On the Superintendents of English Buildings in the Middle Ages." By Mr. W. Papworth. Institute Transactions, 1859—60.

administration to the work? Yet upon the signification of terms, upon mere words, which probably had a different meaning in the Middle Ages, the Reviewer has built up an entire theory, and supported it with pages of assertion. If the records of the Mediæval artists disclose principally the names of master-workmen, it simply proves that such men existed; if those of the architects have not been preserved, neither have those of the poets to whom the thirteenth century owes the "Niebelungen Lied," the "Histoire de Charlemagne et Roland," and a host of French romances composed at the beginning of that century. Six hundred years hence Indian archæologists, exploring the ruins of the English city of Bombay, will possibly find the names of engineer colonels cut upon odd stones; and, comparing them with similar entries in ancient documents, they may ascribe to them the authorship of more than one building,—the original designs for which were made by Sir Gilbert Scott, Mr. Roger Smith, and other qualified members of the Institute of British Architects.

M. Viollet-le-Duc says that the documents which throw any light upon the exact duties of an architect are not anterior to the fourteenth century; and at that time he was "un homme de l'art que l'on indemnise de son travail personnel." People who wished to build provided materials and hired workmen. Neither estimate or valuation of the work, nor the administration of the funds, appears to have concerned the architect. But at the end of the fourteenth century the architect had lost the elevated position he held during the previous 200 years. In the fifteenth century each corporate body worked in its own way, apart from any general direction. The decline of Gothic art had begun; although the hands of the artists had not lost their cunning, the intellect which had formerly directed them was gone. When the Chapter of Rheims * repaired the cathedral after the disastrous fire which destroyed the upper portion of it in the reign of Louis XI., a *procès-verbal* (dated 1492) was drawn up, in the presence of notaries, of the repairs necessary to be done; and in this agreements seem to have been made with four master-carpenters, five masters-masons, two master-slaters, one smith, two master-founders, two joiners, and two masters-organists, all living at Rheims. The advice of the different trades was taken separately, and the central authority appears to have been vested in certain canons, one of whom is called master-administrator; and others are designated as having charge of the repairs. No architect is mentioned; and M. Viollet-le-Duc says of what was then done,—"The monstrous results of that disorder are to be seen at the present day. The beautiful harmony of that admirable church was destroyed, and its existence endangered." Thus when Philibert Delorme appeared upon the scene it was perfectly natural that he should express his contempt for the confusion, want of harmony, and defects of proportion which characterised the Gothic buildings of his early days.

Thus, it has been seen, that before the end of the twelfth century the masters-of-the-work were, so to speak, ecclesiastics; those who dotted Western Europe with buildings issued from Cluny and the houses dependent upon it; and that the fame of Cluny spread to the very heart of Italy. After the twelfth century the masters-of-the-work were laymen; and some were sent from France to Hungary and Spain. "I have been in many lands," wrote Wilars de Honecort, "as this book shows." In another case positive evidence has been produced of an administrative council; and of an architect from Narbonne, in France, employed at Gerona, in Spain, not to follow the daily execution of the work, or to overlook the workmen, but only to direct the design, details, &c. How, then, did all these men make themselves understood in the different countries in which they worked? It is difficult for an architect to explain his ideas to a subordinate, even in his native tongue; it is still more difficult in a foreign one. Was there really a common language, and was it Latin? Not improbably the masters-of-the-work wrote and conversed in Latin, but to the ordinary workmen of France and England, Spain and Hungary, there is only one language which they could have used, and that is the universal language of the pencil and the brush.

If the *Quarterly* Reviewer is sometimes right in his premisses he is generally wrong in their application. It is incontestable, as he says, that "for three centuries there had been a gradual moderate improvement in the architecture of Greek temples; but under the influence of Phidias this at once rose to perfection;" * but this result was attained from the fact that there had been three centuries of experience, not because Phidias used the chisel, and Ictinus or Callicrates left no record of their drawings. It is incontestable that "owing to the great supply of illustrated works, the means of knowledge far surpass the power of analysis in either the professional or the public mind." But who has made the books that are worth anything to architects? Is it not the architects themselves? It is incontestable that the cathedral of Cologne is inferior to those of Rouen, Rheims, or Paris, but the finding of an ancient vellum drawing of it does not account for its demerits; it simply proves that while some of the noblest Mediæval buildings were still new, it was the custom to make drawings of them, and, by implication, for them. The art of drawing is older than the art of writing. Man conversed by signs until he learnt to express himself in words. The tombs of Egypt are covered with hieroglyphics, which are drawn, not written. The forms portrayed in Greek ornament prove that the architect then used the brush much in the same way as his modern representative uses the pencil. Painting upon glass is mentioned by historians from the third century of our era. Manuscripts were illuminated in the days of Charlemagne. Because there is no original plan or diagram extant of the Parthenon, therefore that building was made with hands and not heads! Surely such a supposition would be marvellous in its absurdity had not the Psalmist, while singing the praises of the great Architect of the universe, lamented—The fool has said in his heart, there is no God.

As I told the members of the Institute on a recent occasion, and no contradiction has yet been offered to my statement, the building disasters in Bengal proceed from the absence of any central authority responsible for the design of a building, and the difficulty of procuring lucid and scientific drawings. In my journey across a part of India, I noticed not an absence of architectural features, but an unskilful combination of materials, unscientific planning, and a misapplication of the principles of construction. Building disasters are not frequent in Madras and Bombay, because the principal works in those presidencies are carefully studied by architects, some of whom are Fellows of this Institute. No comparison is possible between the city of Bombay, with its continuous line of splendid buildings, and Calcutta, which still boasts of the tottering "palaces of Chowringhee."

The Reviewer is eloquent upon "the propensity to scrape and daub," which, within the last thirty years, has "spread like a disease among the clergy." He says that, instead of appealing to architects, "they should have sought the village mason, carpenter, and smith."† As if there were any village in England thirty years ago that did not contain traces of the combined efforts of clergyman, mason, carpenter, and smith! It may be useful at the present time to speculate upon the direct patronage of workmen by the committee now sitting for the completion of St. Paul's. Imagine a sub-committee of "operarii" to be formed of two docile members and two irreconcilables for the purpose of imparting to the foreman at the New Wellington Monument the probable intentions of Sir Christopher Wren. Imagine the probable state of that workman's mind when he learnt, that if Sir Christopher Wren, who died in the eighteenth century, had ever visited Italy, he would have adopted the style of the best Italian artists of the sixteenth! The success of direct patronage in such a case is doubtful, because in the presnce of a divided committee the province of an architect is that of a mediator. He must possess tact as well as education; he must be patient, "ne'er answer till a *member* cools"; silent, and submit to misrepresentation in pamphlet and review. It may be questioned whether, under similar circumstances, a master-workman would acquit himself better than Mr. Burges. And I take leave to correct a false impression of this architect, which the public may have formed from reading the *Quarterly Review* and other minor publications. Mr. Burges is not a "sketching draughtsman,"—not clever, in a professional point of view, with his "pencil and bow-pen."‡ His innumerable drawings, made during long tours in different and remote parts of Europe, are not pictorial effects; but rough diagrams, drawn with pencil-stumps, to scale with a foot-rule, on the tops of ladders and in dark corners of vaulting and roof. They resemble rather the sketches of a Mediæval architect than those of a pupil of a school of art. True, like Wilars de Honecourt, he has a vile habit of drawing the human figure, and this must be left to the generous forbearance of reviewers.

A practical illustration of the direct patronage of workmen by the public can be seen in the new building now used for the *Times* newspaper in Queen Victoria-street. It is the boast of those concerned in its erection that no educated architect has meddled with the design; and, I confess, the body of the work is unobjectionable,—successful, even,—but like a writer who, ignorant of Latin or French, sometimes interlards his composition with an irrelevant quotation from Horace, or a mis-spelt couplet from Molière, the amateur who eschews architects has adorned his building with an architectural feature. Those who have visited Athens know that, though the examples extant of Greek art are small, the Parthenon is almost colossal. The span of the pediment is a little more than 100 ft.; and its tympanum was filled, but not crowded, with sculpture, consisting of twenty human figures, 8 ft. in height, with an enormous eagle, horses, and chariots, with many symbolic and other attributes. That portion of the new *Times* office crowned by a pediment is more than 50 ft. in width, and consequently the span of its pediment is about half the span of that of the Parthenon. The pitch or inclination of the former is more than double that of the Parthenon, yet the surface of the tympanum in Queen Victoria-street is completely covered with one clock, one scythe, a branch of palm-leaves, a branch of oak-leaves, and the representation of a parchment roll, upon which are the words,—"Time past," "The Times," "Future." But, it may be urged, the printing-offices are colossal, and the roof over them is consequently of enormous span; therefore the pediment, or vertical end of it, is necessarily determined by the section of the roof. Now in this case the real roof is hidden from the street by a small parapet, and the entire pediment rises above it,—a mere perpendicular continuation of the front wall,—a backless structure, scenic in theory; practically a sham. I admit that there are many members of the profession, supposed by the public to be qualified architects, who have perpetrated solecisms as monstrous as this one, which represents the combined efforts of an erudite amateur and a master-workman. Unfortunately, many well-meaning people, besides *Quarterly* Reviewers, believe that the simple workman is, perforce, a simple-minded man,—that, untainted by the conventionalities of life, he is naturally unaffected. But refinement of body and mind, even when inherited, requires culture. People who lecture to the working classes should remember to tell their "simple" audience how the history of the world and of human nature records that perfect simplicity is the product only of the highest cultivation.

That the profession is of "the nature of an impostare," and that English architecture is "an artistic inferno and a national disgrace,"* is at least amenable to argument. Some of those guilds or corporations which, in France, were founded at the close of the twelfth century still exist in the City of London. There is still a Company of Barbers, one of Spectacle-makers, another of Tallow-chandlers, but the names of few living operatives are inscribed upon their books. The masons are still free and accepted, yet few working masons could gain admission into a modern lodge. But the guild of British Architects, though of modern origin, follows the custom of an earlier age. The founder of the Institute was a practising architect, and he is honoured by the older and kindred societies of Europe. The president is a genuine master-of-the-work; one of the secretaries is the hereditary possessor of a name associated with those of the men who have most contributed to the popular appreciation of Greek architecture; the other is an author of standard books upon art. The Fellows, with a few exceptions, are practising architects; and the cause of the comparative poverty of this corporation is due to the fact that none but honourable men and *bond fide* members of the profession are permitted to swell its ranks.

* "Histoire de Notre Dame de Reims," Ch. Cerf. t. 1, p. 405. Dubois, Reims, 1861.

* "Hope of English Architecture," p. 359.
† "State of English Architecture," page 312.
‡ "Completion of St. Paul's," page 369.

* "State of English Architecture," page 304.

Nevertheless it cannot be concealed that the public, having had its attention directed towards some of the abuses of architectural practice, has sometimes visited upon the mass the errors of a few. The robust manners of Mr. Ayrton, and the muscular opposition to professional intervention which distinguished her Majesty's Office of Public Works during his career, were caught up by individuals, who have been ably represented by a *Quarterly* Reviewer. But since the fourteenth century there never has been a time when the English people more surely promised to imbibe the spirit of art than at present. The fact is palpable in the satirical attacks, made by amateur critics, from prime ministers downwards, upon the whole army of artists; in the affectation of archæological excursions; in collections of bric-à-brac; and in the polite small-talk of drawing-rooms. Art, new to England, is now passing through the ordeal to which English science was subjected more than 200 years ago. The Royal Society was founded in 1660, and then, to quote Macaulay again, "it was almost necessary to the character of a fine gentleman to have something to say about air-pumps and telescopes . . . . . and even ladies broke into cries of delight at finding that a magnet really attracted a needle, and that a microscope made a fly really look as large as a sparrow." The truth is, Art is suffering from a superabundance of vigour. Dame Architecture is "in a plethora absolutely dying from too much health"; and this in spite of more than one *faux pas*. But the mistakes of the present must surely instil caution into the artists of the next generation. If, however, the principles of construction are not now uniformly respected, it is because they are not understood by the people; if the philosophy of architecture is only studied by a minority of the profession it is because it is ignored by the upper classes. Yet the ruling principle of every useful art was preached twenty-four centuries ago. "What," said Aristippus; "can a dung-basket be beautiful?" "Of course it can," said Socrates, "and a golden shield can be very ugly if the one be well fitted to its proper use and the other not."* In the universal acceptation of the inseparable nature of beauty and utility has ever been, and must ever be, the true hope of all architecture.

ON THE ORNAMENTATION OF THE ROMANESQUE, TRANSITIONAL, AND LANCET PERIODS IN THE NORTH OF FRANCE,

As exemplified in the Churches visited in the French Excursion.

THE ordinary general meeting of the Architectural Association on the 18th inst., was appropriated to the reading of a paper by MR. Edmund Sharpe, M.A., who personally conducted the annual excursion of the members of the Association last August. In order to afford space for the large number of illustrative diagrams specially prepared from the sketches made by the members of the excursion, the lecture took place at Willis's Rooms, King-street, St. James's, instead of at Conduit-street. The meeting was very largely attended, the room being filled to overflowing.

Mr. Sharpe said that with respect to the drawings on the walls, they had been enlarged from the work done by the members during the excursion at his suggestion; and if it was agreeable to the Association, he would make the visit of a more permanent character by publishing the lecture as a work. As to the drawings, which adorned the walls, they were well adapted to be photo-lithographed, this art being of great importance to the architect. He was of opinion that the drawings were capable of being at once transmitted to stone, and he only waited for the sanction of those gentlemen who put their pens to paper, to have them photo-lithographed, he being happy to bear the whole cost of the process. By this means he trusted that he would produce a work, which would make this visit a more lasting record than the lecture in itself would be. Mr. Sharpe then went on to say that on Monday, the 17th of August last, a party of upwards of sixty gentlemen, of whom the majority were members of the Association, left a central rendezvous in the city of Paris, to set out, under his guidance, on a pilgrimage to the cathedrals and churches of the North of France. The experiment was looked upon by many as a somewhat venturesome one, and it was not without certain misgivings that he undertook the pilotage of so large a party of heretical foreigners through a country in which, looking at the present state of public feeling in France, any slight act or speech of inadvertent licence might arouse the susceptibilities, either of the natives, or of the clergy, or of the police, and create for them difficulties, which might bring their excursion to a speedy close. It was on this account that, as a preliminary measure of necessary prudence, he applied to the French Minister of the Interior, to whom he explained the nature of their intentions, and the objects of their journey, requesting his formal authorisation of the passage of the party through the departments indicated. He not only very graciously accorded this authority, but he gave instructions to the Prefects, Sub-Prefects, Police, and the Government architects, to hold themselves at the disposal of the Association during the period of their stay in the several towns they proposed to visit, and to afford them all possible facilities. He also wrote to the three archbishops, the ten bishops, and the provincial clergy of the churches contained in the programme, for their permission to visit the churches, and to hold meetings, and to deliver discourses in them, at convenient hours. To all these applications he received, in every case, favourable answers, many of which were remarkable for the goodwill and courtesy they displayed. They had, however, not only to guard against the possibility of mishap, but also to provide for the actual human necessities of the party, in respect to board and lodging during their sojourn in Paris, and their peregrinations through the provinces, and also for their transport from church to church, where the railways were not available. This having been duly arranged for, he could say that on the whole he might safely declare that, whatever might have been the slight difficulties and drawbacks that were encountered, the entire excursion was thoroughly enjoyed by the whole party; and whatever might have been the lessons in architecture that they brought back with them from France, there was one that affected the every-day relations of social life, which the characteristically national politeness of their neighbours on the other side of the Channel could not fail to impress upon those who took part in occasional opportunities of Continental travel, such as these excursions presented. His lecture that night would be divided into two portions. In the first part he would, by the help of the diagram of the country they visited, follow their line of travel, and, in a brief and summary manner, describe to them the chief characteristics of the churches that they visited, indicating the different periods of architecture to which their chief works respectively belonged. He would then endeavour to trace out the progress of the art of carving in stone, during the three earliest periods of Mediæval architecture, as presented to them in the works of the cathedrals and churches of the North of France, during the eleventh, twelfth, and thirteenth centuries; and would conclude by offering a few general considerations which these typical examples of French work suggested to them, when they came to compare them with the contemporaneous works of their own country. In speaking of the three several stories into which the main wall of a church was usually divided vertically, he would call them (1) the ground-story; (2) the blind story; and (3) the clear-story. The first and last of these terms explained themselves; the middle one was that story which either screened off, or opened into the space that intervened between the vaulting of the side aisle and the wooden roof above it, and which was usually unlighted and dark. But in many of these French churches there were four stories, the additional story being a gallery over the ground-story, frequently almost as lofty as the ground-story itself, and lighted by an upper range of windows in the raised aisle-wall. Where this exceptional feature occurred, he proposed to retain for this lighted gallery the familiar term of triforium. The term "arcade" he confined to wall arcades in the side aisles and elsewhere. Then, in referring to longitudinal divisions of the main walls of a building, he would, instead of using the word arcade or bay, which had a double signification, speak of them as compartments. They found in France no architecture corresponding with the earliest English work,—the Saxon; but there was work which, although of an earlier type than the earliest Norman work, could be looked upon as nothing else than Romanesque. Under that general term, therefore, of Romanesque, he comprehended all the Mediæval work that existed in the district, down to the first appearance of the Pointed arch, which had certainly made its appearance in France, pretty generally in arches of construction by the year 1130, and, in exceptional cases, still earlier. They next came to that great and grand Transitional period, the tomb, as he had ventured to call it elsewhere, of the Romanesque, and the cradle of Gothic art. Of the prolific results of the inexhaustible fertility of invention, and rapidity of production displayed by the builders of this remarkable period, they had no greater proofs than those which were preserved to them in the cathedrals and churches of the North of France. The character of these works had a very strong family resemblance to typical works of the same period in other parts of Europe; and, together with a grace and beauty of its own, possessed in common with the former that breadth of design and boldness of construction which characterised the works of their period all over Christendom. He was disposed, then, to put down the duration of the true Transitional period in the North of France, as from 1130 to 1190. They now arrived at a point of time in the history of European art which was of the greatest possible interest to the architectural student. During the last ten years of the twelfth century, and the following first ten years of the thirteenth century, a style of building developed itself in England which produced remarkable results during the next thirty years of its existence in this country. This style of building was characterised chiefly by its elegant and luxuriant relieved foliage of conventional type, by a multiplicity of minute and deeply-grooved mouldings, by its high clustered shafts, and by its tall, narrow, pointed windows. Some persons persisted in calling this style of building Early English, although it had been placed beyond doubt that it was not the earliest characteristic English style, whilst others continued to call it First Pointed, although he had conclusively proved that it was not the First Pointed style practised in this country, and that the Pointed arch was, in fact, used in a systematic manner in English buildings for nearly half a century before the year 1190. He had preferred to designate this period, during which this style prevailed, by a term derived from its most characteristic and uniformly prevalent feature, namely, the tall narrow Lancet windows he had already referred to, and to call it the Lancet period. By whatever term, however, they might choose to designate this period, no one, he thought, would offer any objection to the limits that he had assigned to it—namely, from A.D. 1190 to 1245; or would hesitate to declare it, with him, to belong to that great phase of European art which they called by common consent, Gothic; and to be, as he held it was, the first completely developed style of that phase of Mediæval art. For, nowhere in Europe, with a single exception, did they find those two chief principles,—lightness and elegance,—which characterised Gothic work, so strongly pronounced, and so far advanced, as they were during the prevalence of the Lancet period in England. In Normandy, it was true,—and that was the exception to which he referred,—they found works which appeared to rival in these two respects the works of their own country; but these works were exceptional; they were not typical works of the country in which they were found, and were, in all probability, the production of men impressed with the influences they had seen at work on the opposite side of the Channel. If this be true, it was remarkable that, whereas in the eleventh century they received their architecture from Normandy, their builders should, within a century and a half, not only have completely emancipated themselves from the influences of foreign art, but have struck out for themselves. With the exception, then, of certain works in Normandy, he asserted that nowhere did they find, at the close of the twelfth and during the early part of the thirteenth century, any trace of that rapid progress in the direction which all European art subsequently took, as they did in England. The works of this period in the North of France differed so materially from that of the same date in England, and departed in all its leading features so little from the forms of the preceding Transitional period, that it appeared difficult, at first sight, to give it a distinct classification, or to fix upon features which might enable them to characterise it. There was one feature, however, which it possessed in common with their own contemporaneous work, which appeared to be sufficient for this purpose, it was the plain Lancet window, without tracery, which seemed to have been employed throughout the whole of

* Xenophon, by Sir A. Grant, page 113. Blackwood & Sons, 1871.

this short period; it was broader and shorter than their own, and it had been, in numerous cases, removed and replaced with large traceried windows. Until, then, some one supplied them with a better term, he would designate this period by the same term that he had adopted for their own contemporaneous period, and call it, for the present at all events, the Lancet period of French art. But although the French did not arrive as soon as they did at the true principles of Gothic art, it was astonishing, when once apprehended by them, how rapidly they gained upon the English, and how soon they passed the English in the race. Whilst English architects were still travelling on a line of their own, and lingering amongst the delights of the so-called Early English or Lancet work of Salisbury Cathedral, Rievaulx Abbey, and Ely Presbytery (the last of which was designed so late as 1235), their Continental neighbours were engaged in developing a new style which soon overran the whole of Christendom, which created prodigies of art in Europe, and in which Gothic architecture attained its climax. Many years before the Geometrical traceried windows of Westminster Abbey, Lincoln Minster, and Tintern Abbey had seen the light, the designs of Amiens Cathedral and St. Denis had been prepared, and he thought he would not be wrong in fixing the year 1230 as that of the commencement of the Geometrical period in France. He had no intention, however, of entering that vast region of Continental art which opened to them when they advanced beyond the middle of the thirteenth century, but would take the year he had just indicated as the limit of their inquiries that night, as it was, with a few exceptions, that of the illustrations which were upon the walls.

With regard to the excursion, the first day was devoted to the churches of Paris,—St. Germain des Près, the chapel of the Hôtel Dieu, Notre Dame, La Sainte Chapelle, and the church of Montmartre. The nave of St. Germain des Près was Romanesque, and chiefly interesting for the capitals of its piers, which were what the French called histories; that was, they carried carved work of figures of men and beasts, which was of that barbarous and primitive kind, that distinguished not only the earliest Romanesque work, but was more or less characteristic of Mediæval sculpture, until they arrived at an advanced point in the Transitional period. Whatever interest, however, this carved work might have derived from its early and quaint character, was sadly disturbed by the manner in which it had been treated in modern times; for the church having been recently "decorated," the whole of their ignorantly-designed and clumsily-carved figures have been covered, or "picked out," as the modern decorators' phrase goes, with gilding, the rest of the capital being painted light vermilion. He left them to imagine the grotesqueness resulting from this kind of treatment, and the effect produced on the mind of the startled excursionist, when he was told that these gilt gingerbread figures were the work of the eleventh century. The whole church had been similarly decorated; but in the Transitional choir it failed to diminish the interest that the student must take in the grand columnar piers of the apse, with their richly-carved capitals covered with the characteristic foliage of the period. The Chapel of the Hôtel Dieu, formerly, he believed, called St. Julien des Pauvres, was a little gem of the Transitional period, with its parallel triapsal east end, and characteristic ornamentation. It was a church that was difficult to find, and still more difficult to enter, for it was never opened, except for the burial of paupers who died in the Hôtel Dieu. As to Notre Dame, it was impossible for him to do more in this hasty review, than to notice one or two points of interest in its history. The first building, of which there was anything left, belonged to the Transitional period, and was a grand design, which gave in fact its grandiose character to the entire structure, as they say it at present, although its external appearance had been so entirely changed by the rearrangement of the whole of its windows, by the addition of flying buttresses, with their pinnacles, and by the insertion of side chapels between the buttresses, not only along the side aisles, but round the choir and apse, as to give it, to those who first approached it, the appearance of a building of the thirteenth century. When, however, they entered the building and reached the crossing, they perceived at once, in the single compartment in each of its four sides, which adjoined the crossing, the true key to the whole design, each of those compartments, north, south, east, and west of the crossing, retaining the original blind story and clearstory, and having been during all these alterations undisturbed, as being essential to the stability of the crossing, and the lantern that surmounted it. This grand old building, commenced towards the close of the Transitional period, the eastern end of it having been consecrated A.D. 1081, exhibited in its ornamentation, particularly in that of its pier capitals, that gradual advance of taste as they proceeded from east to west which was apparent in almost all works of great magnitude, especially in France, and revealed to them the fact that Notre Dame commenced in the Transitional period, and gradually carried on from east to west, was not brought up to its west end before the end of the first ten years of the twelfth century, and that its two western towers belonged exclusively to that period, which he called the French Lancet period. In an able article that appeared lately in the *Times*, the restoration of the whole of Notre Dame had been attributed to M. Viollet-le-Duc. This was a mistake, as that gentleman was only entrusted with the completion of the work after the death of M. Lassus, by whom the greater part of these works of restoration was designed and carried into execution. La Sainte Chapelle, independently of the fact that its architecture lay beyond the limit that he had prescribed to himself that evening, was too well known, and had been too often described to require any remarks from him. But he was disposed to suggest the consideration of the following questions to those who might happen to have seen it before it was restored, and since it received on its walls and on its windows the amount of beautiful coloured decoration that it at present carried, had the value of the *architectural* effect of the building by its treatment in this respect been diminished or not? Did the coloured surface of the whole work too exclusively attract and fix their chief attention? Were they able, as well now as formerly, to recognise and appreciate the true form of the moulded and carved work of the building, and its natural effects of light and shade? *

* To be continued.

A NEW HALL FOR THE CURRIERS' COMPANY.

IN the *Builder* of July 19, 1873, we gave a descriptive notice of a new hall then in course of erection in London Wall, for the Curriers' Company, and more recently we gave an illustration of the new building as completed. This structure, which involved a heavy outlay, and the "hall" of which is elaborately finished, has recently been sold by the company to Messrs. Rylands & Co., the extensive manufacturers, of Manchester and London, together with the whole of the company's adjoining property, with the exception of the site upon which another new hall is about to be erected. The existing new hall which has only so recently been completed, is to be demolished, and the entire site purchased by Messrs. Rylands & Co., will shortly be occupied by large warehouses.

The hall, which has been designed by Messrs. J. & J. Belcher, and who were also the architects of the structure about to be removed, is now in course of erection, and the memorial-stone was laid with ceremony by the Master of the Company last week. The principal *façade* of the new hall fronts London Wall. The style of architecture adopted is the Gothic, and the elevation will be entirely in Bath stone. The width of the frontage is 30 ft., and it will be a prominent feature in London Wall, being unusually lofty, terminating with an ornamental tower at the west angle, and a turret, of similar character, at the east angle. The west portion of the elevation projects considerably beyond the other part of the frontage, and the principal entrance is on the ground-floor of this part of the building, consisting of a recessed Gothic archway, the extreme width of which is nearly 12 ft. This is surmounted in the centre by an ornamental finial, with the shield of the company on either side, and two turrets on the extreme east and west sides of the archway. A special feature in the Gothic windows of the several stories, which are four in number, in addition to dormers, consists in the upper portions being filled in with stained glass, containing, amongst other devices, the arms and shields of several former masters, wardens, and benefactors of the company. The second story of the west side of the elevation contains a large projecting window, in three divisions, about 12 ft. in width, and 10 ft. high, at the foot of which there is a balcony, faced with six shields. The arms and shields of the company are also introduced, carved between the windows in each story.

The several apartments in the interior of the building are all commodious. The ground floor will be exclusively devoted to the business department of the company, and will consist of the offices and apartments of the secretary and officers, together with committee-rooms and waiting-rooms. The first floor, which is approached by a staircase, in carved oak, closely resembling the decoration and finish of the staircase of the existing hall, leads to the reception-room and grand hall. The hall is much larger than that of the building about to be removed, being 48 ft. in length, and 24 ft. in width, whereas the before-named apartment is only 33 ft. by 20 ft. The hall will be fitted throughout in carved oak, with a panelling of that material carried round the apartment. The hall will contain five large mullion windows, with ornamental heads, and in each window there will be seats or lounges. A mezzanine floor immediately above contains dressing-rooms, lavatories, and other conveniences, and a private staircase leads to a musicians' gallery at one end of the hall. The keeper's residence will be in one of the upper floors. It is arranged that the present hall shall not be disturbed until the new hall in course of erection is completed and ready for occupation.

The contractors for the building are Messrs. Braid & Jopling, of Westminster.

THE NEW HARBOUR AT DOVER.

THE Government have announced a Bill to come before Parliament next Session for powers to carry on extensive works at Dover Harbour. In the first place it is proposed to construct a "pier and breakwater, commencing at the seaward end of and by a junction with the Government pier, and extending eastwards for a distance of 550 ft., or thereabouts, and terminating in the bed of the sea." The great work, however, will consist of "a pier or breakwater commencing at a point on the sea-shore, 450 ft., or thereabouts, to the eastward of the landward end of the castle jetty, and extending southward for a distance of 1,900 ft., or thereabouts, and terminating in the bed of the sea; a pier or breakwater commencing at a point in the bed of the sea, 800 ft., or thereabouts, southwards from the termination of the last-mentioned pier or breakwater, and extending thence in a southerly direction, 1,200 ft., or thereabouts, and terminating in the bed of the sea." It is further contemplated to construct "a pier or jetty commencing at the top of the pitched slope between the Government Pier and the South Pier of the harbour, and extending seaward in a south-easterly direction for a distance of 1,200 ft., or thereabouts, and terminating in the bed of the sea." This last work is probably meant for the accommodation of the steamers conveying passengers and mails between Dover and Calais and Ostend. The new works are so designed that they utilise the Admiralty Pier as a necessary portion of them. The total cost of the three contracts into which the undertaking was divided was up to March 31st last, 679,368*l.*, which is exclusive of the fort for the War Department, which is being constructed at the end of the granite isthmus, at an estimated cost of 21,682*l.* The length of the pier is 2,100 ft., or 700 yards, and it has been built under the direction of Mr. Edward Druce, the resident engineer. The existing harbour contains about twenty-five acres, divided thus:—Twelve in the outer harbour, six in the Granville Dock, and seven in the Pent. The proposed new harbour will be about 300 acres.

Presentation to the Master of the Warrington School of Art.—On the 17th, a number of the pupils, past and present, of the above School of Art, met at the Museum for the purpose of presenting to Mr. J. C. Thompson, the master, a testimonial of their esteem and regard. The presentation consisted of a valuable silver tea and coffee service, and bore the following inscription:—"Presented to J. Christmas Thompson, Warrington School of Art, by some of his pupils (past and present) as a mark of their regard.—Christmas, 1874." The pattern engraved upon the service was designed by Mr. William Fell, formerly a pupil of the School of Art. Mr. Thompson has been master for nineteen years.

THE ALEXANDRA DOCK WORKS AND BUILDINGS AT NEWPORT.

DURING the last three or four years new dock-works of great magnitude have been in progress at Newport, in Monmouthshire, for the purpose of giving additional shipping accommodation to the South Wales coal and mineral district, as well as for giving increased facilities to the general trade of the port of Newport. The works include a spacious new dock 2,500 ft. in length, and 500 ft. in width, containing a water area of 29 acres in extent, which is considerably larger than the average size of the docks at any port in the country. This new dock is now almost completed, and it is expected that it will be opened for shipping purposes very early in the coming year. It has an average depth of 30 ft., and has an entrance-lock 350 ft. in length, approached from the river Usk by a large entrance-basin. There is an unusually large area of land in connexion with the dock to the extent of 170 acres, which is intended to be devoted to quay and railway space, and for the building of warehouses, and other manufacturing establishments, and large portions of the ground are immediately intended to be so appropriated. The extensive range of quays are to be thoroughly lighted with gas, and provided with an ample supply of water for the shipping. It is confidently expected from the great size of the dock, the facilities in connexion with railway purposes, and the unusually large space of ground around its margin for commercial purposes, that it will give a great impetus to the shipping and maritime interests of Newport and this part of South Wales. The dock is already connected with the Great Western and Monmouthshire systems of railway by branch railways the property of the dock company, and in connexion with this branch there are extensive sidings and coal-hoists of the most approved construction for the rapid shipment of coal and other minerals with cranes for the timber trade and general traffic. These are all worked by hydraulic machinery, constructed by Sir William Armstrong & Co., of Newcastle. Ship-building and repairing is also about to be largely introduced as an additional feature in the business of the port; and with the view of carrying out this object a large graving dock, 450 ft. in length, is in course of construction.

THE ENGRAVING ISSUED BY THE ART-UNION OF LONDON.

CO-OPERATION is a matter on which a good deal of controversy has lately taken place, even to the extent of occasioning a deputation to a Minister of State; but we question if any example of what the power of co-operation can effect could be cited more striking than the fact that every member of the Art-Union, this year, will obtain for his guinea (virtually, considering the amount repaid in the form of prizes, &c., for about eight shillings) an impression of the fine plate engraved by Mr. Lumb Stocks, from the noble wall-painting, in the Palace of Westminster, of the meeting of Wellington and Blucher, at La Belle Alliance, after the battle of Waterloo. Certainly no publisher, in the days when engravings in pure line were published, could have sold such a print as this at less than three guineas.

We cannot refrain here from uttering a lament for the almost entire abandonment of the art of producing works in line in favour of the more rapid and cheap method of chalk, or stipple, or mixed engraving, now adopted in this country. It is only necessary to place an impression produced in this style by the side of an engraving in pure line to appreciate the vast superiority of the latter in force, in brilliancy, and atmospheric effect. The cause of difference is to be found in the fact that in this method a clear, deep line is cut in the plate, which defines the boundary of black and white, besides taking up and transferring to the paper a much greater quantity of ink; and not only is the amount of ink much greater, but, as may be seen by looking at a sheet of paper passed through the press on a line-plate, without any ink, the paper itself is, by the enormous pressure to which it is subjected, actually covered with a pattern in relief, of every mark of the graver, so that the ink is, as it were, lifted on a ridge of paper at every line. The impressions are, until the ink becomes dry and hard (which does not occur for some months), exceedingly tender and liable to damage, and a very slight touch, such as drawing the corner of a sheet of tissue-paper over the surface, is enough to produce a black line. We would take this opportunity of giving a practical hint as to the remedy to be adopted on the occurrence of such an accident. The damage would appear to be irreparable; but, take a clean handkerchief, make it up lightly into a ball, and gently beat the mark on the paper in the direction of the lines of the graver, not across them, and it is easily removed.

The great wall-painting which is the original of this fine plate cost Mr. Maclise five years of incessant labour in its production; and Mr. Stocks was occupied for another five years in engraving it.

So much has already been said and written on the subject of the painting, that it is unnecessary to enter into details in order to point out the great interest which the momentous battle commemorated must possess for every Englishman. The lamented Prince Consort took a lively interest in the work, frequently visiting the Royal gallery, and conferring with Mr. Maclise while it was in progress. So great was Mr. Maclise's care that *truth* should characterise every detail of the picture, that he formed, at the cost of great labour and research, a series of sketches giving the minutest particulars of dress and weapons, horse-furniture, guns, and musical instruments, such as were in use, not only in the British, but in the French and Prussian armies at that time.

A question was raised when the work was in progress as to whether this meeting of the two generals in command did actually take place; and, at the request of the Queen, H.R.H. the Crown Princess of Prussia caused inquiry to be made, which resulted in a letter from Count von Nostitz, who was Prince Blucher's personal aide-de-camp at the time, settling the fact beyond all question. As a memento of this kind assistance, the Council of the Art-Union have presented an impression of the plate to the Crown Princess, as well as to H.M. the Emperor.

It may be interesting to state, as a matter of printing-detail, what few persons probably know, that so much care and labour are required in filling the lines of the graver with printing-ink, and afterwards clearing away the superfluous quantity with many cloths, and finally polishing all parts of the plate between the lines with the printer's hand, that it takes fifty minutes to produce each single impression of such a plate as this.

The prints are announced to be ready for delivery to the members on the 1st of February next; proofs may be had now.

A PLAGUE OF RATS, AND HINTS FOR THEIR DESTRUCTION.

FOR some time past the district of Belgravia has been infested with rats to a great extent.

St. George's Hospital, which was closed for three months, was undermined by the destructive vermin; they had burrowed under the brick drains and through them, and the soil ran out in all directions, emitting dangerous effluvia. The cost of repairs and laying down drain-pipes amounted to a very large sum.

The ravages made in cellars of shops, where stores are kept, as well as in the shops, have caused tradesmen to keep traps constantly set, and in many places as many as thirty rats a week are caught in a kitchen or cellar; and when the fecundity of the rodents is considered, it will be seen that in a few years' time, unless some active measures are taken, London may expect great trouble from this cause. It is a startling fact that one pair of rats, with their progeny, will produce in three years no less a number than 646,808. A doe rat will have from six to eight nests of young each year for four years together, and from twelve to twenty-three at a litter; and the young does will breed at three months old; and there are more females than males, at an average of about ten to six. If they ran about the streets like cats or dogs the public would be terrified, but as they hide and work in the dark, men seldom see or think of them.

As to keeping rats out of houses, architects and builders have hitherto been too lax in devising proper measures. Rats are as cunning as they are active, ferocious, and destructive. Their teeth are saws, chisels, and axes. They will gnaw through bricks with but little trouble, and as they always require two holes, one for entrance and the other for escape, brick drains are their chosen haunts, skirting boards, backs of fire-places, under the flooring, or between the rafters are their places for breeding.

The London sewer-men may be taken as authorities on drains, and they state that brick drains are the rats' best friends, and that nothing but glazed pipes with heavy sink traps will stop the sewer rats getting into houses. They will not go up pipes for fear of being drowned, knowing they have no means of escape. They are seen in the sewers migrating in communities to some discovered quarter for food, and the sewer men believe that they have a language of their own. If builders were to case skirting boards with galvanised plating, particularly at each corner, it would stop the vermin considerably. Care should also be taken to fill with concrete and small stones or broken glass, the space under and about fire-places, as the doe rats choose that quarter for breeding on account of the warmth.

In some parts of the country rats are kept out of corn stacks by first digging all round it a trench a yard wide and a yard deep. At the bottom of the trench a layer of stone or very hard brick is placed well grouted; on this layer a wall is built to the surface, when the rats burrow to get under the stack they meet the wall, and as they burrow still lower they can get no further for the bottom layer. Clever as they are they have no notion of burrowing back, and corn stacks, granaries, or barns so protected, are generally pretty free from the plague.

The chief enemies to rats in large towns are cats, dogs, ferrets, poison, and traps. Many cats will run away from a rat, whilst others will destroy them wholesale. Dogs cannot get at them so readily as cats, and will not watch a rat-hole so patiently. Ferrets are dangerous to turn loose in a house, and can only be used by professional rat-catchers.

Poison is a dangerous remedy, and, moreover, as they die in their haunts, drains get stopped up, and the bodies also rot under the floors or other places too near to be healthy or pleasant. Besides, as soon as some poisons begin to operate the vermin get thirsty, and convey the poison to tanks or water-butts. If a building be so placed or constructed that poisoned rats will not do much mischief, the receipt hereafter given is the best method of destroying them.

Traps, of which there are many sorts, offer, perhaps, the best mode of destruction, but it requires almost an apprenticeship to manage them.

One mode, called the "butchers' trap," is to get a good sized cask and tie over it a strong piece of paper or parchment, like a drum-head. Place this cask in the place infested, and on the head of it a few bones, rice, or the bait hereafter referred to. Let this be done at least for a week, until the bait disappears. Next place two bricks, one on each other, inside of the cask at the bottom, and fill with water to the level of the top brick. Tie on the parchment as you would a jam pot, and with a sharp penknife cut in the centre a cross, about 3 in. each way. A rat on passing over this cross-cut will fall through it, and on getting into the water will at once get upon the brick, and make such a squeal as will call all his friends to the top of the cask to slip through the hole themselves; and they will all make for the brick, and a terrific fight takes place to get the brick. In the morning nearly all will be found drowned or bitten to death.

The gin-trap, which catches them by the legs as they tread on the centre, should have a piece of paper laid over it and the guard set for a few days so that it will not go off. This can be placed outside their holes until they get accustomed to it, when it can be properly set. Care must be taken with this trap so that cats or dogs are not caught in it; and it should also be nailed down, or tied to something strong, or the caught rat will drag it away. Only last week a rat caught in this trap at the New Supply Association, Long-acre,—a warehouse much infested,—drew trap and a 14 lb. weight tied to it several yards, and this, too, with three legs, as its fourth leg was nearly cut in two with the trap.

The other traps are chiefly wire ones, but they require cunning baits, of which the following are the best preparations:—

Take the nut of a bullock's liver, well boiled. Mix with the liver a handful of bread-crumbs as fine as possible. Add a pint of oatmeal, 4 ounces of powdered loaf sugar, 7 drops of the oil of carraways. Mix and bait the trap with it a few nights, so that the vermin can go in and out without the trap catching them. Doe

rats with young can seldom be induced to enter a trap.

To scent a trap, take 20 drops of oil of rhodium, 7 grains of musk, and half an ounce of the oil of anniseed. Steep in this a small piece of paper twisted up. Rub the trap with this, and leave the paper in the trap. Keep the phial well corked.

To poison them, rasp three figs of nux vomica in 4 ounces of bread-crumbs. Lay this about their runs. This will not poison a dog or cat, but kills the rats.

When rats get under flooring or behind skirting-boards, a good plan is to fumigate them, as is done on board of a ship. Take a handful of common salt, and lay this in every crevice, hole, and direction. On the salt pour a teaspoonful or two of oil of vitriol. This will not only start them off, but they will not return in a hurry.

Another plan is to stop up the holes with this mixture:—Take 1 pint of common tar, half an ounce of pearl-ashes, 1 ounce of oil of vitriol, and a good handful of common salt. Mix well in a glazed pan. Spread this mixture on brown paper both sides, and well stuff the holes with the paper. Rats will never approach the holes again if properly done and kept up.

In stables poison must never be used, as vermin feed in the mangers and corn-bins, and the traps must be baited with oats, as well as the other bait.

Upon an inquiry as to the probable cause of the increasing plague, it appears that the Royal Society for the Prevention of Cruelty to Animals have something to answer for, through prosecuting men keeping rat-pits, as thousands of rats were yearly caught for this purpose. Another reason given is the prosecution of ratcatchers for going down the sewers to catch them. Before this stoppage was made to the destruction of the pests there were several professional ratcatchers in London; at present these useful men are scarce articles, and one seldom sees her Majesty's ratcatcher with his emblazoned belt about the streets. The instructions above given will, however, if persevered in, enable sufferers to become their own ratcatchers.

It may be useful to observe that Paris was overrun with rats, until some inventive genius discovered rat-skins would make admirable leather for ladies' kid-gloves; and the way they were caught for the tanners was by placing a sack with a running-noose round the mouth at the bottom or side of sewers; in the sack was placed a feed of bones or entrails. The rope drew the mouth of the sack tight when it was pulled up, and in this way thousands were bagged. The same plan was carried out in the sewer under Cambridge House, Piccadilly, when Lord Palmerston resided there.

PROGRESS IN CHINA.

In respect of building and public works, it is gratifying to hear of progress being effected in China, be such progress ever so small. From reports relating to different Chinese ports, we learn that at Newchang some activity is being shown in this direction. A site has been purchased for the erection of a British Consulate, and the old Chinese Temple from which the British flag has flown since 1861 will be vacated on the completion of the new buildings. More private dwellings have also been added to the number of foreign houses in the settlement, all contributing to improve its architectural appearance. Safely, too, the foundations of a Romish church and of a large substantial building for Protestant missionary purposes were laid almost simultaneously. It is stated that the district will be further improved by an arrangement made with the Harbour Master's department for utilising the large quantities of ballast brought by the foreign shipping in the construction of roads and pathways where they are most required, as well as in strengthening the river frontages, to which purpose such ballast has hitherto been applied. Our Consul from Ningpo (Mr. Chaloner Alabaster) writes to the effect that he has to note a distinct advance in civilisation in that native city, viz., the establishment of street lamps in the main thoroughfares, on the model of those used at Shanghai, though kerosene oil is used in place of gas; and these newly-imported lamps give great satisfaction, it appears, for their improved power of illumination. It is also stated that steps are being taken in Ningpo to connect the different stations of the native fire department by a line of telegraph; while in the foreign settlement steps have been taken to improve the drainage,—a rather pressing want; and it is not very satisfactory to learn that in this respect there has not been much progress achieved. Generally speaking, however, it would appear that China, in homely phrase, is looking up.

BUILDERS' HOARDINGS AND BILL STICKING.

A project is under the consideration of the Newington Vestry for taking away from builders the power of letting hoardings for advertising purposes, which it is alleged has become an intolerable public nuisance. At the meeting of the Vestry, recently, a recommendation was submitted from the paving committee to the effect that in all future licences granted to builders for the erection of hoardings, a proviso be inserted prohibiting bills or placards of an advertising nature being placed thereon. The discussion on the recommendation which followed showed that the general feeling of the Vestry was in its favour.

Mr. Silvester remarked that the advertisements upon the hoardings had become an inducement for builders and others to keep them up to the inconvenience of the parishioners. But it was those who came from a distance to make a profit out of the hoardings who did the mischief.

Mr. Barker considered that if the recommendation was carried, even builders themselves ought not to be allowed to put up their notice boards; but this proposal was objected to on the ground that the builders' own notice-boards was altogether different matter to plastering hoardings with placards of all descriptions. It was also suggested that the hoardings in future should not be higher than 8 ft. or 9 ft. It was stated in the course of the discussion, as a reason why many of the hoardings were allowed to remain so long, that in some cases the income derived from them was really larger than would be produced by the building of a house on the vacant space. An amendment against the recommendation of the committee was lost, and the subject was referred back to the committee, with an instruction to consider the propriety of limiting the height of hoardings to 8 ft.

OVERCROWDING IN THE SOLDIERS' COTTAGES ON WOOLWICH COMMON.

A grave and serious instance of overcrowding, for which the War Department of the Government would seem to be responsible, was brought to light at the last meeting of the Plumstead Board of Works. Dr. Finch, the Charlton Medical Officer, reported a severe outbreak of diphtheria at the Soldiers' Cottages on Woolwich-common, and referred in his report to the overcrowding which prevailed in the cottages. Mr. Thorne, the surveyor, also reported at great length on the subject, stating that there were fifty-two of the huts, in which 104 families resided. The huts were one story in height, each hut containing two rooms, and each room was used both as a living and a sleeping room for a separate family. Mr. Lloyd, one of the members of the Board, remarked that it was a disgraceful state of things that a married soldier, his wife and children, should be huddled together in one room. This would be condemned in the worst parts of London; but the District Board had no power to eject or to destroy the huts, the same as with the civilian population. He added, that the huts ought long since to have been swept away, and that he did not wonder soldiers should desert when they were so treated. On the other hand, Mr. Jolly, another member, observed that, as a rule, soldiers were never better cared for than at the present time, and he had no doubt, on a proper recommendation being made to the Secretary of State for War, those wretched huts would be abolished, and more modern and healthier buildings be erected.

It is to be hoped that the War Department will take immediate action in the matter; but it is not creditable to the Government authorities that they should have permitted such overcrowding to exist amongst those who are in the service of the nation, and that an outbreak of a formidable epidemic has alone caused the exposure of the evil.

Hughenden Manor House, the residence of Mr. Disraeli, is to be enlarged by the addition of a new wing, from the designs of Mr. Arthur Vernon.

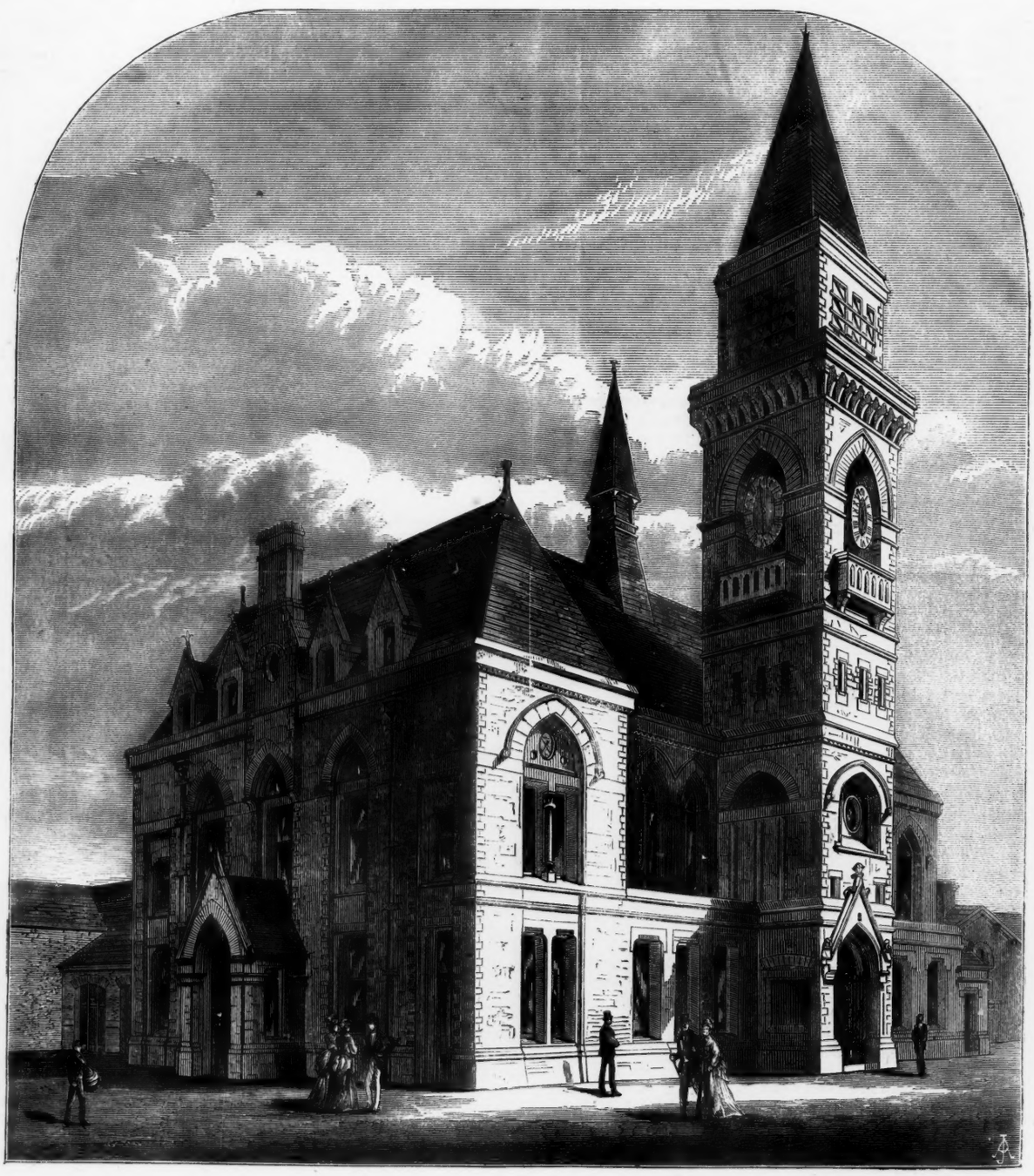
EASILY GAINED AND WELL SPENT.

During the past year the pearl fishery of Ceylon was unusually productive, and unexpectedly added about 70,000 rupees to the colonial revenue. The Hon. Mr. Gregory, the governor, has asked the Legislative Council to permit him to regard this amount as an exceptional windfall, and to devote it to exceptional purposes, for the benefit of all classes. He proposes to apply 10,000 rupees of it in aid of the erection of a seamen's home, believing it "appropriate to devote a portion of extraordinary revenue from the sea in enabling 'those who go down to the sea in ships, and occupy their business in deep waters,' to escape from drunkenness and debauchery, and to have the refuge of a respectable home." Fifteen thousand rupees more he wishes to employ in erecting fountains in different towns which have not the benefit of municipal institutions. Other 20,000 rupees he assigns to deepening and improving Colombo lake; a further sum of 15,000 rupees to the improvement of the mountain sanitorium at Nuwara Eliya; and the balance of 10,000 rupees to complete unfinished improvements in Kandy, which the Government cannot ask the municipality to carry out. With respect to this last grant, he says, "These so-called improvements are, in fact, the restoration of works on which the Kandyan monarchs showed their refinement and good taste, but which the barbarous vulgarity of certain British rulers degraded and destroyed. Had the structures to which I refer been handed over to the municipality of Kandy in good order, they would have been bound to preserve them; but as the municipality had to take them in a mutilated condition, it is but fair to put them to rights. This vote will complete the improvements which have been going on in Kandy for the last three years, and will make the ancient capital a credit to the island." It would be well if every unexpected surplus were expended as judiciously as the 70,000 rupees which constitute this Cingalese windfall.

MADRAS HARBOUR.

For many years past the commercial community of Madras have been clamouring for the construction of efficient harbour works to supersede the rickety pier which at present constitutes the sole landing-stage for passengers and goods, and which is only approachable by small craft. The local belief is that, notwithstanding its natural disadvantages, Madras might be converted into a great port, and a multitude of schemes have been proposed to effect this much-to-be-desired object. Up to the present time that of Mr. Parkes has been most generally approved, and a hope has been entertained that, since the Colombo Harbour works have been sanctioned, the Home Government would authorise the Public Works Loan Commissioners to advance the necessary funds for the erection of this project also. In the meantime advantage has been taken of the delay by two new competitors to advance another scheme, which, at least, attracts attention by its extreme novelty. The authors of this most recent design are Mr. P. Pritchard Baly and Mr. Geo. Preston White, the latter of whom is known by several patented inventions, and has had some experience of India. Their idea is to run out a very long pier, throwing out successive pairs of arms, each pair being longer than the pair immediately preceding them. These arms are not at right angles to the pier, but incline considerably towards the shore. The outermost pair of arms are intended to be of great length, inclosing a wide expanse of water, which would be divided by the shorter arms into small and well-sheltered bays. Lithographed plans of this tree-like harbour, and of the two docks which it is proposed to construct at the shore end of it, have been distributed in Madras, but have not been received with much favour.

The Water Supply at the West End.—At the fortnightly meeting of the Vestry of Kensington, last week, Dr. Dudfield reported numerous complaints of the bad quality of the water supplied by the Chelsea Waterworks Company during the last fortnight. The water had been very turbid, owing to the presence of chalk and fine mud. The cause of this was the flooded state of the river, which was reported to have risen 4 ft. in one night, and the insufficiency of the company's reservoirs, which compelled them to take in water daily. The report was adopted.



RHYL TOWN HALL.——Messrs. Wood & Turner, Architects.

RHYL TOWN HALL.

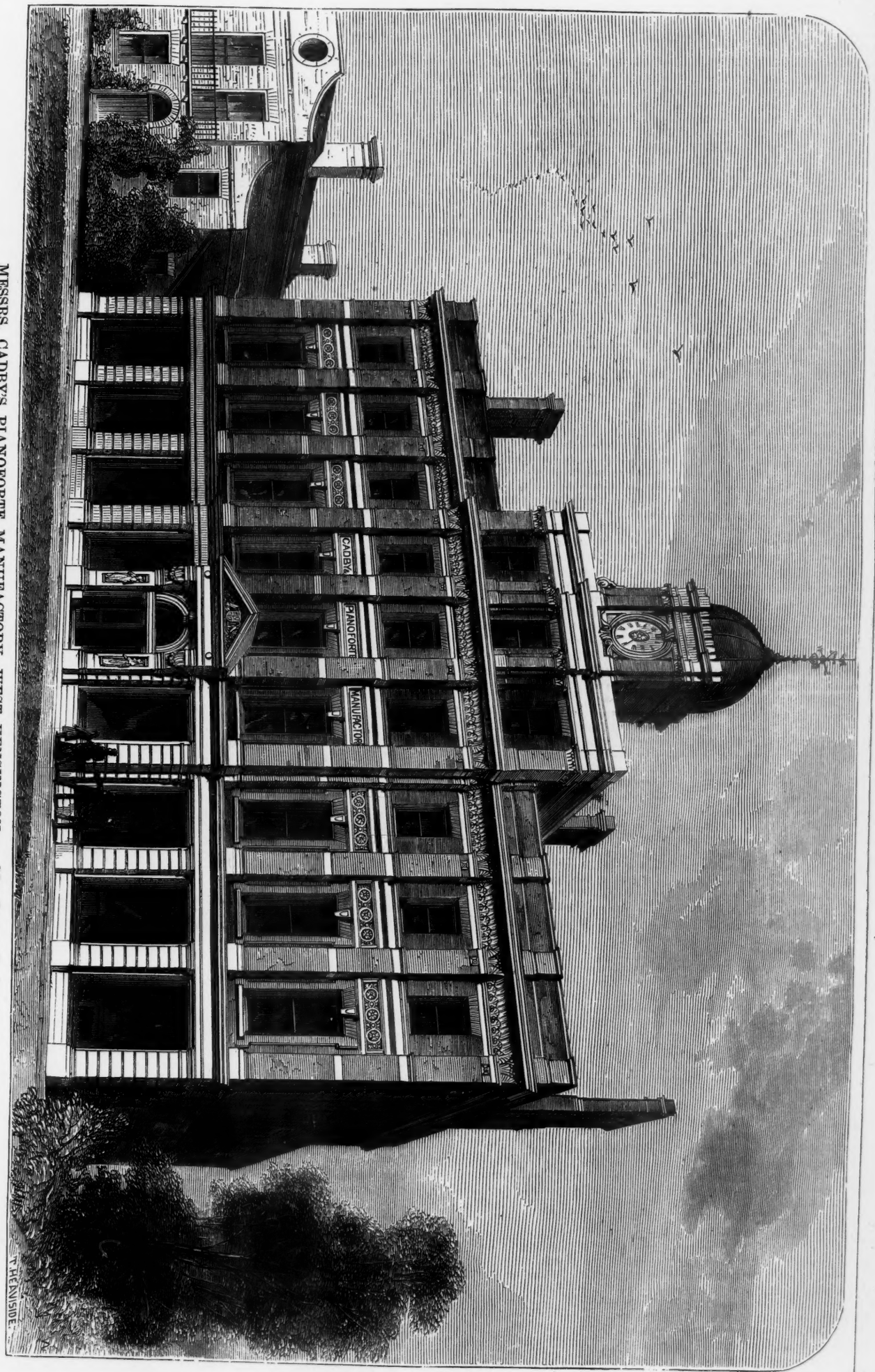
The first stone of this proposed new building has been laid. The present market and municipal buildings being inadequate to the requirements of this thriving watering-place, the commissioners decided last year, in addition to carrying out a new drainage scheme, to erect a new town-hall, &c., at as moderate a cost as practicable. For this purpose instructions for competition were forwarded to five architects, which resulted in the appointment of Messrs. Wood & Turner, of Barrow-in-Furness, to carry out the works from designs submitted.

All the present buildings, excepting those of the market, will be removed and replaced by others of a more commodious and substantial nature. Transept wings will be added to the end of the present market, increasing the area by one-half its present dimensions. It will have three separate entrances, viz., from Wellington-road, Water-street, and Queen-street, and will be thoroughly ventilated. The fish-market will be placed at the end of the block, in close proximity to the general market, but entirely disconnected therefrom. Flanking the general market and fronting Water-street there will be a group of buildings one story high, comprising a soup-kitchen, fire-engine room, store-room, &c.; on the opposite side, fronting Queen-street, will stand the town clerk and surveyor's offices, Board-room, and a bazaar, all having access from Queen-street.

The clock-tower will stand in the centre of the block, fronting Wellington-road, and will be 16 ft. square above the base, and 120 ft. high; the centre of the clock will be 60 ft. from the ground, the chamber above it being arranged for a chime of bells. The clock and bells have been presented by Mr. H. Eyrton, M.P. for Denbigh. Space has been set apart for accommodating the North and South Wales Branch Bank with windows and entrance from Wellington-road. The Corn Exchange is entered from the main entrance leading to the market. The entrance to the Assembly-room is central with the main building on the Water-street side, with an office each side of it. A staircase, 8 ft. wide, leads to the Assembly-room, which occupies the whole of the Wellington-road front, its inside dimensions being 79 ft. by 40 ft. 6 in. There is an end gallery, the full width of the room, beneath which are retiring-rooms on the assembly-room level. The stage being placed at the end opposite the entrance, is in close proximity to the Board-room, which will be provided with a revolving screen to divide it into two stage retiring-rooms as occasion may require, lavatories and other accommodation being provided for both rooms.

On each side of the tower a balcony is formed by setting back the front wall of the assembly-room 6 ft. 6 in. from the wall below. The assembly-room roof is formed with principal, backs and collars; the principals being additionally tied with wrought-iron rods. The room will be 30 ft. high, and lighted by two sun-burners, placed immediately beneath ventilating trunks springing from the main roof. The walls of the tower and main building will consist of Denbigh stone faced with Penmaenmawr sets, and dressings of Wrexham stone.

Mr. J. Rhydwen Jones is the contractor.



MESSRS. CADBY'S PIANOFORTE MANUFACTORY, WEST KENSINGTON.—MR. LEWIS H. ISAACS, ARCHITECT.

MESSRS. CHARLES CADBY & SONS' PIANOFORTE MANUFACTORY AND SHOW-ROOMS, WEST KENSINGTON.

THE requirements of the new street from Oxford-street to Shoreditch having rendered it necessary to remove Messrs. Cadby & Sons' factory and warehouse in Liquorpond-street, the firm determined upon migrating westwards as soon as the negotiations for the compensation to be paid them had been concluded with the Metropolitan Board of Works. A very eligible piece of land known as the Crofton Estate, containing 8½ acres, and situated in the Hammersmith-road, a little to the west of the Addison-road railway-bridge, was offered for sale in November, 1873, and was purchased by the firm. An area of 1½ acre, with a frontage of 109 ft. towards the Hammersmith-road, was set apart for the new factory and show-rooms, the remainder of the estate being intended for ordinary building plots. The new premises designed for Messrs. Cadby are now so far completed that the firm have entered into possession.

The buildings comprise four distinct blocks, the show-rooms, which form the subject of our present illustration, fronting the main road, but standing back 40 ft. so as to admit of a carriage-drive to the entrance porch. The same distance of 40 ft. again intervenes between the show-rooms and the factory, and between the factory and the mill; whilst the timber-stores, packing-case shop, stables and coach-house, are placed in the rear of the site on its eastern side. This arrangement of the buildings has been designed principally with the object of preventing the spread of fire, or rather the confining it to the one building in which it may happen to break out. The front building will be entirely devoted to show-rooms on the ground, first, and second floors, the rooms above being occupied by the housekeeper. The clerks' and private offices, and rooms for the use of the members of the firm, are situated in the rear of this building, which is 94 ft. long by 58 ft. wide.

The factory is 103 ft. long, 35 ft. wide, and five stories high, the staircases, lavatories, and latrines being contained in an annexe thereto. In this building the finer portions of the pianos are manufactured and put together, and the instruments completed with the exception of the tuning. The mill is 122 ft. long, 35 ft. wide, and likewise five stories in height. In this building all the sawing, planing, and the heavier portions of the work are executed. The boiler and engine house, with the engineer's shop, being adjacent.

The timber-store contains all the veneers and other woods employed in the various processes of this manufacture, which require seasoning and keeping in stock for several years, to insure their being thoroughly fit for their intended uses. This building is 95 ft. long and 43 ft. wide, and contains two stories only.

The buildings in the rear are solidly constructed of picked stock bricks, the staircases being composed of stone, and the roofs slated. The floors in the mill which have to receive the weight or strain of machinery are laid with 3-in. deals.

The front building next the Hammersmith-road is faced with Fareham red bricks and Portland stone, terra-cotta being introduced in the panels over the first-floor windows. The key-stones of these windows contain carved portraits of celebrated composers of the Italian, German, and English schools of music. The royal arms are cut in the tympanum of the porch, and there are *bassi rilievi* on the sides of the entrance doorway, the subjects selected being music and poetry. This sculpture and the carving generally have been entrusted to Mr. R. Almond.

The works have been executed by Mr. Thomas Elkington, builder, of Golden-lane, who was represented by Mr. Pratt. The original contract was 25,200*l*. It having been subsequently determined to add another story to the mill, the total cost was thereby increased to 26,024*l*. Some notion may be formed of the rapidity with which the works have been executed when we state that the contract bears date the 2nd of May last, so that practically eight months have sufficed to erect and complete this large establishment.

The works have been erected under the personal superintendence of Mr. Lewis H. Isaacs, architect, of Verulam-buildings, Gray's Inn.

House Property in London.—Mr. John R. Fowler, of Abchurch-lane, sold by public auction on Friday the freehold house No. 3A, Clifford-street, Bond-street (a frontage of 18 ft. by 53 ft.), for the sum of 8,230*l*.

ON THE "KINDERGARTEN," OR DEVELOPING SYSTEM OF DRAWING.

AT the last meeting of the Edinburgh Architectural Association, the following paper was read by Mr. Leonard A. Wheatley on the above subject:—

The importance of drawing to the architectural profession is undeniable. This being the case, it is as well to consider what is the best method to follow in order to attain proficiency in this art. As a nation, we do not excel in drawing, and many of our best artists would have been the better for a greater knowledge of and a fuller training in it. The French, as a rule, are splendid draughtsmen, and the German artist excels in his drawing more than his colouring. The system to which I wish to call your attention, is not to replace freehand drawing and copying from nature, but simply to train the hand in making lines and curves, and the eye in seeing correct distances and proportions, thus giving a taste for the graceful,—matters which are of vast importance to the architect, who, as a rule, has been too apt to despise drawing, notwithstanding some splendid masters of the pen and pencil in his ranks. The science of education, or "pædagogics," is only of recent date. Great credit is due to Jean Jacques Roussean for, in some measure, introducing, or rather for calling attention to, a more reasonable system of education; but his genius was as erratic as his philosophy emotional, and would have had little or no effect even in his own country but for the labours of the philosophers of Germany. Kant and Hegel did not think it beneath their notice, but Herbart and Beneke were the principal writers to develop the science. Pestalozzi was, however, the author to whom education is chiefly indebted. He, like Arnold in our own country, strove to implant (and by his noble character succeeded in doing so) in the minds of his pupils a certain religiosity, or higher tone of morals, even in the most elementary teaching, knowing well the power of morality in elevating the mind, and the higher the mind the more capable is it of receiving true education. Pestalozzi was born at Zurich in 1746, became director of an educational establishment at Yverdun in 1804, and died at Brugg, in Aargau, in 1827. His writings, which were voluminous, have been extensively read, and passed through many editions, several of them having been translated into various languages. His scholars were very numerous, and through them an immense improvement was effected in elementary instruction throughout the whole of Europe, and his name was held in such estimation that the centenary of his birth was kept with great *éclat* in 1846. Among his pupils was Friedrich Fröbel, the founder of the "Kindergarten" system, and to one of the results of whose labours I wish to call your attention. F. Fröbel was born in 1782 at Oberweizbach, in Schwarzburg-Rudolstadt. As it was intended that he should be a farmer, he studied the natural sciences at the University of Jena, after which he became the secretary on an estate in Mecklenburg; but he felt called to a higher destiny, and went to Frankfort as a humble teacher in 1803, and from henceforth remained faithful to his vocation; he passed three years in tuition at Pestalozzi's Institute at Yverdun, and his mind was thereby decided in favour of Pestalozzian ideas. He now went to the Universities of Göttingen and Berlin for the purposes of study; but then came the time when, Europe being overrun by the armies of Napoleon, he felt called upon, like Fichte and other noble minds to take up arms in the war of liberation, and joined the celebrated rifle brigade commanded by General Lützow, and immortalised by the poet Körner,—

> "From sire to son the tale shall go,
> 'Twas Lützow's wild Jäger that routed the foe."

On the restoration of peace, he founded in 1816, an educational institute at Griesheim, removed a year later to Keilhau, near Rudolstadt, an establishment which still flourishes. He left it to be carried on by other men in order to found fresh ones in Switzerland. It was not until his return to Germany in 1837, that his ideas were matured on what he felt his real mission to propagate, and what resulted in the "Kindergarten" with which his name will ever be connected. He wished to propose something to employ children before the legal age for school. He had already founded a Kindergarten at Blankenburg for the purpose, and now on his return to his native country, he was enabled, notwithstanding many hostile attacks, to carry out successfully, and with general approbation, his system of teaching by means of games. He died in 1852 at Marienthal, where he was about to erect an establishment for the training of Kindergärtnerinnen, or female teachers of his system. The idea is that children should be led to gain knowledge, and what is better, be made to think, even in their games. Children attend to their games, and if these are superintended, attention is readily given to those directing them; the toys are very simple, those first used are small pieces of wood like lucifer matches (Stäbchen), which are laid in various directions, and joined so as to form figures and outlines of familiar objects, the children being made acquainted with the meaning of straight lines, horizontal, perpendicular, and diagonal, then angles (right, acute, and obtuse). As a gift they have bricks, when they learn the meaning of square, cube, &c. Peas are used to join the little sticks, in order to make various pretty objects. Plaiting, sewing, and drawing, are all employed in turn, but the chief end of the system is to direct the children to think; they also learn to be *exact*, *attentive*, and *industrious*. All sorts of knowledge are acquired, not only by exhibition of natural objects, such as flowers, &c., in a garden, but pictures are extensively used in conveying instruction. Children are treated as reasonable beings, and are led, not driven, and may obey the poet's admonition:—

> "Be not like dumb driven cattle:
> Be a hero in the strife."

In teaching drawing, books and slates are used which have been ruled in small squares (chequers). The pupil commences by marking over the lines the length of one space in a perpendicular direction, then two, then three, then four spaces; afterwards alternately, 1, 2, 3, 4; 4, 3, 2, 1. When this is accomplished, the pupil is encouraged to invent designs from the strokes he has learnt to make. After which, he proceeds in the same manner with horizontal lines, and in his subsequent composition uses both perpendicular and horizontal lines. He is now in a position to be shown the junction of these two lines so as to form right angles, and make squares of different dimensions, disconnected, joined, and interlaced, the parallelograms of 2, 3, and 4 spaces, as well as other figures formed of similar lines. The square is then divided, the acute angle thus formed being explained; diagonal lines, called of the 1st, 2nd, and 3rd order, according to the slope, are now practised singly and then in unison with those previously learnt. After copying these in the book, drawing from memory should be done on the ruled slate, one of the chief benefits being the use of the inventive faculty; the pupil's compositions should be drawn first on the slate, when any faults can be pointed out by the teacher, and when corrected copied into the book. I am enabled by the kindness of Mr. Fröbel, the nephew of the inventor, and who carries on the system in Edinburgh, to show some of the drawings he executed when a young man at the establishment at Keilhau, as well as some by his daughter at ages of eight, nine, and thirteen. He says the inventive faculty is stronger in boys, by whom some very beautiful designs have been made. After the pupil is proficient in the use of straight lines, having formed all manner of angles and many-sided figures, with every variety of angles, he is prepared for the circle, which is drawn first small and single, then in various combinations, and united by lines, then larger, afterward arcs of circles, the angles at the points of junction of the arcs being explained, thus preparing the pupil, by geometrical drawing and by the use of geometrical terms, to the higher study of geometry itself. You will now see why the system deserves the name of "developing." As all true art must be on this principle, it will not do for the architect to commence at once to form his buildings in geometric fashion, as has been done in this city, but as all good architecture has gradually been developed, we must use the inventive faculty in us by improving our present style, or rather want of style, and seeking to form harmonious and truthful combinations with the materials which are now placed in our reach, nor shirking the difficulty by hiding them up, not leaving them to engineers to carry out, but by improving our own taste and that of the public; and this is what I claim for this system, which, however, is not itself even developed to its full extent, but when the drawing has met with the success it deserves it will be followed by other subjects, such as colouring, &c., but it has not as yet met with sufficient

encouragement in this country. In Switzerland, one of the countries most forward in education, the Kindergarten is general, as also in Austria, where it has lately been ruled that no school shall be without a garden, gardening being used as a means of training. Work, such as requires the use of tools, is employed with great success in a similar manner; and if this were better carried out we might more often meet with that intelligent master workman so much spoken of, but so seldom met with. Something must be used as a means of training: in our country we generally used Latin and Greek, as at Oxford,—sometimes mathematics, as at Cambridge,—of late years some have proposed modern languages, and others science. The advantage of drawing, however, is that it can be commenced earlier, and after-training gradually acquired by it, knowledge of mathematics follows as a natural result; and the acquisition of languages, modern and ancient, is more easily gained by a mind already advanced in growth and maturity. In the architectural profession, a young man who has had the advantage of this training will be none the less able to use the rule, the T-square, and the compasses, but he will have acquired method, carefulness, and accuracy,—qualities by no means to be despised.

Afterwards, Mr. R. Thornton Shiells read a paper "On the Heating of Buildings."

KELMARSH CHURCH, NORTHAMPTON.

This church has been lately restored and partly rebuilt at the sole expense of Mr. Richard C. Naylor, of Kelmarsh Hall. The whole of the south windows of the nave, as well as the east window of the chancel, which previously were in what is usually called Churchwarden's Gothic, have been replaced by new windows in Ketton stone, of fourteenth-century character. The arches and piers dividing the nave from the north aisle have been also renewed. The piers are of polished red Aberdeen granite, with foliated capitals in Ketton stone. A new oak hammer-beam roof, with foliated corbels and shafts of polished red granite with stone foliated capitals, has been put to the nave, the hammer-beams being carved into angels holding shields containing emblems, &c. An oak carved and panelled roof has also been added to the chancel. The roofs are covered with Colley Weston stone slate. The whole of the reseating, which is open, with stalls at the west end, are new, and are, as well as the pulpit and reading-desk, of carved walnut, with some admixture of oak. The carving is all conventionalised from nature, and specially designed by the architect, and consists of adaptations from the maple, hawthorn, oak, hazel, vine, wheat, trefoil, cinquefoil, and many others, with an admixture of birds, insects, and animals, all carved with the greatest delicacy and artistic feeling.

The chancel has a reredos below the east window, carved in Caen stone, with polished red granite shafts. The panels are inlaid with antique marble, which were brought by Mr. Naylor from Rome, and the sacred emblems executed in glass mosaic, the centre panel having a raised cross carved in statuary marble, and inlaid with glass mosaic. The east wall on either side of the reredos is inlaid with marbles and alabaster, with jewelled and inlaid crosses in antique marble. The sides of the chancel have arcades below the cills of the windows, with red granite and serpentine shafts alternately, carrying out the same character of design as the east wall, having inlaid antique marbles in the arches, with carved spandrels containing the emblems of the Passion. The upper portions of the walls have borders of marble and mosaic work, forming panels between the windows, filled in with figures—St. Denis, the patron saint of the church, and the four Evangelists. On the east wall, on each side of the east window, is a panel surrounded by an antique marble border, one containing the figure of St. Peter, and the other that of St. Paul. The whole of the figures, which have gold grounds, are executed in Powell's glass mosaic.

The floor of the chancel is laid in terra-cotta mosaic in different colours, manufactured by Mr. Blashfield, of Stamford, with margins of Hopton Wood stone. The altar-rail is of polished alabaster, with jewels and shafts of marble and serpentine. The altar-table is of ebonised wood, inlaid with antique marble, jewels and shafts to the columns. The east end of the north aisle is separated from the chancel and western portion of aisle by oak carved screens, and here will be placed the organ, which is now being made by Messrs. Berrington.

The whole of the work, with the exceptions mentioned, has been carried out by Mr. Robinson Cornish, builder, of North Walsham, Norfolk, under the superintendence of the architect, Mr. James K. Colling, of London. Mr. John Underwood, of Camden Town, executed the altar-rail and the principal portion of the inlaid marble work. The side windows of the chancel have been filled with stained glass by Mr. W. M. Pepper, of the Euston-road; and the east window with stained glass, at the cost of the rector, the Rev. R. Dalton, by Messrs. Lavers, Barraud, & Westlake, the subject being the Te Deum.

BELFAST ARCHITECTURAL ASSOCIATION.

A lecture on "The History of Painting to the End of the Eighteenth Century" was delivered in connexion with the above Association by Mr. T. M. Lindsay, head-master, School of Art, in the Ulster Minor Hall, the Mayor in the chair.

Mr. Lindsay, in the course of his remarks, said he thought it clearly desirable that the young architect should be familiar not only with the history of his own art, but also with that of sculpture and painting, and with the typical character at least of the great schools whose productions were originally regarded as closely allied with, as they were constantly applied to, the enrichment of the architectural design. Beginning with the origin of pictorial representation, Mr. Lindsay sketched the various phases which painting went through up to the end of the eighteenth century, alluding at some length to the great masters of the art, their chief works and peculiar style. In concluding he said,—In speaking of the great epochs of pictorial art, and of the men who imitated or sustained their greatness, and again in forming a disparaging estimate of the productions of other periods and of other artists whose unsatisfactory works force us to place this estimate so low, it must be understood that our judgment cannot apply to broad, well-marked characteristics. Even in periods when the ambitious works that decorated or disfigured churches, and that now stand as types of what is feeble, pretentious, or tamely conventional in our galleries, even at such epochs there have often been choice examples of good taste and fine workmanship in the more obscure walks of artistic life. When it has happened that the demand for pictorial works was vigorous it has happened, too, that this demand could be satisfied by a sort of manufacture of copies of known pictures: this especially applied to altar-pieces and church decorations; but, then, this was the golden opportunity for the man of genius; his services were certain to be in request, and with the opportunity he often found the means to shake himself free from conventional restraint, and leave works for the ages to admire. Occasionally the man stamps the epoch. Far more often the events and current thought of the time mould, or, at least, direct, the aspirations of genius, and then it is "the hour and the man." In my discursive view of the history of painting the use of various terms, as high art, elevation of sentiment, mere imitation, vulgarity, and degradation have been unavoidable. Equally so it is that each of you will apply these expressions according to your own modes of thought, education, and familiarity with the general subject. Hence such general distinctions must be accepted as indices rather than as dogmas or oracles. When either for gratification or edification we contemplate a picture, always supposing it to be from the easel of one who has qualified himself by years of devoted study, and who has had some image clear "in the mind's eye" which he has sought to deposit on his canvas, let us examine it with fairness, discrimination, and in sympathy with the artist, who, belike, has really put his heart into it. An hour thus spent before three or four good pictures will be more fruitful in true pleasure than weeks occupied, if it deserve the name, in dawdling through galleries by the mile, indolently pronouncing one picture "divine," and another atrocious, parotting the criticisms of a guide-book, or more likely prompted by freshness and novelty to be eulogistic, and by fatigue or a gnawing appetite to condemn Michelangelo as not being able to draw a bit, and Titians as having a poor notion of colour. In the sciences—even in that Protean thing called politics—we seek to find a clear reason for our opinions and convictions; but in art every man is his own oracle, and usually if you differ from him in this, he scoffs at your ignorance, or marvels at the limited perception with which you are unfortunately endowed. Now, assuredly there must be, there are, elements of truth in consonance with those of beauty in every fine picture, as in every real art work—in painting, sculpture, or poetry, and I conjure those still in their student career—I ask those who know it better than myself, to corroborate me in the appeal to seek those attributes of all true art, nor rest till they discover them, and I firmly believe that an art band so animated would be the harbingers of a new renaissance.

POLLUTION OF THE TWEED.

The painful and discreditable story which has just been brought into broad daylight by the Government Commission on the Tweed Fishery Acts deserves notice at our hands. Some years ago we pointed out, after a long personal survey, some of the most salient and disagreeable features of the conjoined processes of pollution; and our observations and conclusions are now amply confirmed by the reluctant evidence which Messrs. Walpole and Young have so carefully educed. The question of the salmon fisheries we will not now touch; but the collateral conclusions justify and support each other. The most beautiful and romantic river in Scotland is at this moment converted into a common sewer for the manufacturers on its banks, and on the banks of its tributaries.

> "What beauties does Flora disclose,
> How sweet are her smiles upon Tweed!"

as the poet sang about a century ago, is no longer applicable to the silver Tweed, except by way of a grim paradox, or rather as a disgusting parody.

We have no wish nor desire to anticipate the report of the Royal Commissioners, only as their mission had no direct reference to the public health (excepting, of course, in the direction of "food supply" or fish preservation), we may be pardoned if we make some use of certain passages of the evidence, which, by the way, has been freely reported and commented on in other quarters. The subject, indeed, is important enough to challenge observation in every particular, and at all hands; for which of us can afford to feel uninterested in it?

We presume it is hardly necessary to recall to the recollection of our readers that all the towns and "populous places" on the Tweed and its tributaries are now converted into a series of flourishing manufactories of that well-known cloth which is called from its local habitation "Scotch tweed." From Peebles to Galashiels, from Galashiels to Selkirk, and thence to Hawick; the whole district is thickly dotted over with manufacturers whose business seems to depend equally on getting a copious supply of water and in copiously polluting it. But it is really wonderful with what unanimity the whole of these manufacturers hold the opinion that their processes of weaving, fulling, dyeing, dressing, and so forth, produce in effect no pollution, or, at least, hardly any at all!

In the celebrated cause as to the river Esk, the Lord President of the Court of Sessions laid down the dictum that an upper river proprietor is bound to send down the water to a lower proprietor, "*undiminished in quantity and unimpaired in quality.*" We sincerely trust the Galashiels gentry may also be made to understand this principle of law long before the lapse of twenty years, as Mr. Commissioner Walpole far too mildly suggests to them.

We have to add: first, that the whole sewage of the neighbouring towns is poured into the Tweed; secondly, also the whole refuse of the manufactories; thirdly, that this wrong is done without let or hindrance. And we leave our readers to form their own conclusions.

The English Church at Spa.—English visitors to this favourite watering-place will be glad to learn that the completion of the English Protestant Church there is now decided upon. We learn from a private source that the Belgian Government has made a first advance of 60,000 francs, and that the architect has received official instructions from the municipal authorities, into whose hands the money has been paid, to recommence and continue the works with the least possible delay.

WARMING AND VENTILATION.*

THE Romans warmed their buildings with radiated heat, the air conveying the same passing through vertical tile flues about 6 in. by 1½ in., fixed in the walls. The outer half of the flue was movable, probably to facilitate the cleaning of it, as may be seen in the very partially exhumed remains of our English Pompeii, —the city of Uriconium.

In a climate like this, people as luxurious as the Romans would need ventilation as much as we do; but as there are no indications of any provisions for this in the lower parts of the buildings left to us, I am flattering myself with the idea that they may possibly have effected this in the upper portion thereof by some such plan as I am going to suggest to you.

I am assuming that the building we propose to ventilate is one where 1,500 to 2,000 people are wont to assemble, and for which I consider extraordinary means are required. Experience teaches us that in such buildings the most perfect kind of ventilation which we enjoy is found in the summer-time, and fortunately when it is most needed. This is when the windows on both sides are open, allowing large volumes of air to be wafted through the room from apertures, say 4 ft. by 3 ft., over our heads, and our enjoyment simply consists in getting the quantity of air we need. Now, as we require as much fresh air in winter as in summer, can we, in substituting ventilators one-twentieth of the area above named, reasonably expect the same results? Unless we look for a miracle, we can no more believe that the lungs of 2,000 people can be properly fed with air supplied through a dozen wire-covered gratings, say 12 in. by 6 in., than that a similar number of apertures lurking behind the plaster ornaments of the ceiling can carry off the gases emanating from such an assembly.

So eager is cold air to come into a warm room, that if the inlet is only large enough for it to be, as it were, squirted in, it is regarded as a draught, and the ventilating valve is immediately closed against all further admission, and the warmer air having thus no inducement to escape, comparative stagnation ensues.

I am now describing the condition of such a room in the winter time, when the heating apparatus and gaseliers are in use; but what must it be in mid-seasons, when there is no artificial heat to stir up the currents of air, and when it is too cold to allow of the windows being opened. If you want to know what superlative stagnation is, and what carbonic acid gas tastes like, half an hour spent in such a room will give you a tolerably good idea. Now nine-tenths of the audience on leaving this assembly would merely observe, "How hot the room was"; but is it a fact that the headaches they would bring away with them are due to the heat? If so, how is it that any one of them could spend double the time in a conservatory, where the temperature was much higher, without feeling the slightest inconvenience? A moment's reflection should tell them that the discomfort and nausea they experienced was simply owing to the filthy state of the atmosphere. I speak advisedly when I say filthy, for carbonic acid gas is not the only offensive product emitted by the lungs; and, without going into any analysis of the same, it is sufficient to say that in an assembly of 1,000 persons there would be above a million and a quarter respirations in the hour, and under the circumstances the whole of the air would become polluted; there is no alternative, therefore, but that it must be again inhaled by the audience, and that so indiscriminately, that they must take that which comes first; and however much the unhappy individual thus placed may yearn for a mouthful of fresh air, the only change of air he could obtain would be that which had been exhaled by those immediately round him, and which he takes in exchange for what he has just parted with himself.

I cannot believe that this state of things is generally known, or there would not be such apathy and indifference exhibited as to the sanitary condition of our public halls; and the question once more arises,—what is the best remedy that can be offered for the removal of this evil?

If I suggest the natural or open window ventilation before named, you will say, however practicable it may be in warm weather, it is totally inadmissible in winter time, when cold and fog abound, and that under such conditions you could not remain five minutes in the room without catching your death of cold. In this I fully concur; but assume for a moment that circumstances necessitate your attendance at a public meeting before there is time to set the warming apparatus in action, and that owing to some cause or other the upper sashes of the windows are compelled to be open, the first thing a prudent man would do would be to put some extra clothing on his body, and cover his head with a sealskin cap; then, after tying the ear-flaps well under his chin, he would envelope his throat, and possibly his mouth and nose, with a worsted comforter. Being thus attired, I ask you,—Would he be likely to take more harm than if he were driving through the cold wind, sitting by the side of his groom in an open gig? Would he not, on the contrary, be enabled to spend the time quite as agreeably, if not more so, than if he were encountering the night air in the manner I have just described? I am inclined to think he would. And why? In thus walling himself in, he would be simply preserving the heat of his body which would otherwise escape. In covering the inlet to his lungs with that woven ventilator, properly called a comforter, he would experience no discomfort from the air which he inhaled, probably because it would be tempered by the bodily heat accumulated in the worsted wrapper, —while the latter, being of a porous and non-conducting material, would freely allow of the egress of respired air, and at the same time prevent any considerable escape of bodily heat. Inasmuch, however, as cold air is not in itself injurious to the lungs, I am not quite clear that this immunity from the ill effects of night air is not solely due to the extra provision made for the retention of our animal heat, and consequent protection from local draughts; but whether or no, I think the principle is one which may safely and advantageously be applied to the warming and ventilating of our halls of public assembly. Granting this to be the case, and taking the summer system of ventilation before named as our basis, the conditions to be observed for producing the like results at other seasons, are the following:—

1. Such provision must be made for generating and preserving artificial heat as will keep the room at a summer temperature.

2. The quantity of fresh air admitted into the room must be as great at one season of the year as another.*

3. When the air is cold, and its tendency to fall thus rapidly increased, the mode of admission must be such as will preclude the possibility of its descending upon the audience in local streams.

4. The porous or percolating screens which form the inlets and outlets must be of such a material as will allow of the free passage of air, and at the same time prevent an undue escape of the artificial heat of the room.

Assuming, then, that by the Perkin's pipe system we have an efficient method of generating artificial heat, the first step I should take to prevent the escape of the same would be to double-glaze our windows, or, in other words, put on our extra clothing.

Then as to ventilation: I would provide for the admission of fresh air by constructing the sash windows with a box head some 3 ft. or 4 ft. high; in these there would be an extension of the upper sashes, the framework of which, instead of being filled with glass, should be covered with a sheeting of woven or finely-perforated material of non-conducting nature, so that when the sashes were drawn down, they would fill up the space (or as much of it as may be required) ordinarily occupied by the glass. The slightest motion in the external air would create a windward and a leeward side to the building; and the fresh air would probably select the former side for entering through the perforated material before named. The portals being distributed over a large area would restrain the boisterous precipitancy with which the cold air rushes into a warm room; and instead of the air coming down upon our heads at the rate of ten miles per hour, ample time would be given for the requisite quantity to enter at something like two miles per hour—at which rate, be it understood, air ceases to be felt as a draught. Oozing then, as it would, through this permeable medium, and gradually commingling with the warmer air of the room, it would imperceptibly find its way to the audience below, without subjecting them to any inconvenience,—when owing to the further increased temperature communicated to it by contact with their lungs, and with the radiated heat from the floor, it would again rise, and, after giving part of its caloric to the fresh volumes of cold air entering in and eager to take its place, would pass out of the building through the woven screen-work on its leeward side. This screen-work, as I have before stated, being of a non-conducting material, would prevent the loss of heat which would necessarily ensue were it composed of perforated zinc, or the metal wire-work generally used. It will be seen that the motive power to which this action is due lies simply in the maintenance of a given temperature within the room, and that in proportion as the external air is denser than that within, so will be the admission of fresh air, and the consequent expulsion of foul air. Indeed, the force on duty here may, in its operation, be likened unto that more familiar, and sometimes equally active one whose continual cry is "move on."

Now, with the knowledge we possess of physical laws, I am inclined to think that this system of ventilation in the winter time would, as to its mode of operation, and in respect of the quantity and agreeable quality of the air received, be the nearest approach we could effect to the natural summer one first-named; and I may also observe, that, except in cold weather, when artificial heat is required in addition to that given out by the audience (the latter constituting the only moving power in the milder seasons), it cannot be called an artificial mode of ventilation; and, moreover, being, as you see, inseparably connected with the economy of heat, the fuel saved in generating the latter would more than compensate for the additional expense involved in the construction of our buildings,—at any rate, it would contrast favourably with the expensive and very artificial system which is adopted in some buildings, and especially in our houses of legislature—where it can be readily proved that the air which the members breathe costs more per head than each of them expends upon the wine he drinks.

By reason of its simplicity and economy, and being, as it were, self-acting, it is equally applicable to the wards of public hospitals; and though I have in the Nottingham Infirmary adopted the method of warming and ventilation which I have prescribed for domestic buildings, I am persuaded that in the larger wards it would more effectually meet the exigencies of the case.

Before I take leave of the subject of ventilation, I may observe that there is scarcely anything which so much exemplifies the truth of what I said at the outset about the little progress we have made in this science, as there is in its application to sewerage; and more especially if we gauge the results by the cost at which they have been attained. After the thousands which have been expended in charcoal boxes, and extraction shafts of one kind or another, whether for neutralising or for getting rid of the gases generated in our sewers, we have come to the conclusion that there is nothing to be done but to make as many direct outlets in the middle of our streets as possible,—which is practically to revert to the happy-go-lucky way, or open-drain system, adopted in the middle ages, when the only neutralisation aimed at was simply a copious dilution of the gases with atmospheric air. I cannot conceive that such a solution of the problem is one which will meet with general approval: my own experience is, that when you have no other reply to make to a ratepayer on his complaining of the effluvia arising from one of these outlets, than that he is going to have two others in place of the one opposite to his own house, it is not found to be a very encouraging one. Assuming that such a remedy is not of an exhaustive character, I would suggest to your consideration some amplification of the system which I have adopted on the Nottingham Park Estate, viz., in making the street lamp-posts serve the purpose of extracting-shafts. By slightly increasing the diameter of these posts, and substituting for the single vertical bat-wing burner four or five horizontal jets, issuing from a ring fixed at the summit of the outlet with their flames converging to the centre, the gases conveyed from the sewer would, while passing through this flame, undergo such an amount of combustion as would, I think, render them innoxious. Our streets would be no worse for a little more light, and it would probably be found sufficient to turn the gases, which may have accumulated in the sewers during the day, into these outlets simultaneously with the lighting of the lamps at night. The cost would be nothing compared with the advantage gained, and not

* See p. 1050, *ante*.

* The fulfilment of this condition is of the utmost importance, and it is my belief that the secret of our non-success is mainly due to the ignoring of it.

much as compared with that of previous experiments.

The history of warming and ventilating is a most interesting one, and if time permitted, we might record the various methods to which man has resorted to protect himself from the inclemency of the weather: how, by way of forming, as it were, a portable climate, he began by coating his body with mud and paint,—then by clothing himself with the bark of trees, interwoven rushes, or the skins of animals,—and, subsequently, as he became more civilised, by garments of hair and wool; how, to secure a fixed climate, the Ancient Briton first built round him a wattled hut, and then a cabin of clay with a hole in the roof, through which he breathed and let out the smoke from his fire; how, when he went over to Rome, or rather allowed the Romans to come here to enlighten him, he found by the radiated heat of a hypocaust, he could be warmed without being suffocated at the same time; how, as he again degenerated, he had recourse to a less artificial means, and our feudal lords selfishly appropriated to themselves the animal heat of their serfs, who sat shivering underneath the table folding their masters' legs within the clothing which enveloped their bosoms; and the peasants, as in Normandy, resorted to the cow hovels in winter time, borrowing warmth from the oxen while they carried on their lace-making;—how heated cannon balls and charcoal braziers developed into Romford Stoves, and Romford's Stoves into Milner's Stoves,—and fuel was economised by mixing it with clay and coal, and then burning it in revolving grates; how many of such devices, supposed to be inventions of the present day; prove to be repetitions of things gone by, would take long to describe; and interesting as the retrospect might be, it would only serve to show that the thing which is, is that which has been,—and that in warming and ventilation, as in other arts, there is nothing new under the sun. There is more superfluity than there is originality in the fragrant smear of oil and dirt, which forms the winter clothing of the dusky Australian savage of the present day, than there was in that of the aborigines of our own island,—and I have no doubt he views himself with as much complacency when thus attired as they did.

Whether it is that we are apt to magnify the importance of that which emanates from ourselves, and are disinclined to admit the possibility of its having occurred to others before us, I do not know; but it is surprising how many of the things, which we believe to be modern inventions, turn out to be nothing more than reproductions of a former age,—for instance, ask any of our medical men when the speculum, occasionally used in midwifery, was first introduced, and nine out of ten would probably say fifty or a hundred years ago. Look again at our advertisements, and who would suppose that any but Heal & Son invented metal bedsteads: nevertheless, recent discoveries at Pompeii show that the identical instrument first named was used by surgical practitioners seventeen centuries ago; while as to the latter, there are chapter and verse to prove that Og, King of Bashan, himself slept on a bedstead of iron. Who knows but that we may yet live to unearth a gas-pipe, or to discover in the Pyramids a photographic portrait of a Pharaoh?

Great as are our achievements in engineering, we should still be puzzled to know how, in the absence of steam power, men succeeded in raising single blocks of stone one upon another, weighing a thousand tons; nevertheless, if it had to be done, we should, I think, find men who were equal to the task: but with respect to the art in which we ourselves are engaged, what is there which presents so little originality as the architecture of the present day? People may well say, why do we not invent a new style? Why be content with simply reproducing that which has been done before? Perhaps the best answer we can give is to inquire of those who propound this question, whether originality is really an essential element of all good architecture; and if so, where do they find it? Can they point to any building, or to any single period in the world's history, in which a new style was suddenly introduced? On the contrary, I maintain that in every transition the change was gradual, and the outcome of it was simply a refinement, or a development in growth, of something which previously existed. If this be so, all true art must necessarily be progressive; and when it ceases to be so, we are either driven to resuscitate something which existed in past ages—as was done in the sixteenth century—or we get into a state of Babel-like confusion, out of which the only escape is to try back, and on finding the old progressive groove, to begin again. This is very much like what we are doing at the present time, and should we find that we are on the right track, we may fairly hope that the buildings we shall henceforth produce, will, as works of art, be as much in advance of those we have left behind, as they certainly will be, in regard to their warming and ventilation.

THOS. C. HINE.

THE COMPETITION DESIGNS FOR DWELLINGS IN GOSWELL ROAD, LONDON.

THE directors of the Industrial Dwellings Company, assisted by the report of Messrs. Charles Barry and George Godwin, have awarded the first premium, 250*l.*, to the design marked "*Salutaris*"; and the second, 150*l.*, to that marked "Self-Contained."

The author of No. 1 was found to be Mr. Henry Macaulay, Kingston-on-Thames; of No. 2, Mr. Banister Fletcher, of the Poultry.

INCOMBUSTIBLE WOOD.

EXPERIMENTS AT BIRKENHEAD.

EXPERIMENTS were recently made at the Chain Testing Works, Birkenhead, with a plan, which has been patented, of rendering wood incombustible, and impervious to atmospheric influences. The patent is the property of Mr. C. Jarvis, of The Priory, Tunbridge, Surrey, who superintended the experiments. Mr. Jarvis's process is by immersing timber in a solution of tunsgate of soda.

Samples of wood, which had been immersed in the solution, were subjected to several tests. One of them was to place a piece, ½ in. thick in the flame of a gas jet, and keep it there for thirty-five minutes. When taken out it was found to be only slightly charred to the extent of one-sixth part of it, and to have no flame upon it. A piece of ordinary wood was placed in the flame, and was entirely consumed in less than ten minutes. About forty or fifty pieces of the prepared wood were soaked in petroleum, and then set fire to, when it was found that as soon as the petroleum had burned itself out, the flame died away, and the wood was scarcely injured at all. Another lot of similar wood, which had not been prepared by Mr. Jarvis's process, was destroyed in a very short time. Dr. Brown remarked that if the landing-stage had been built of wood prepared according to this patent the recent conflagration could never have occurred. Dr. Brown subjected a piece of prepared wood to the action of oxygen gas, which was found to have very little effect upon it, whereas a piece of common wood was completely destroyed in a short time. A still more crucial test than all was tried with a piece of ordinary brown paper, which had been soaked in the solution. Mr. Jarvis wrapped up in this paper about 1 lb. of gunpowder, which he then placed in a barrel full of shavings. On a light being applied the shavings blazed up and were rapidly consumed, but the paper resisted the action of the flames and the gunpowder remained intact. The result of the experiments was deemed satisfactory.

BEQUEST OF PICTURES DECLINED AT BIRMINGHAM.

AT the meeting of the Birmingham Town Council last week, Mr. Collings read the report of the Free Libraries Committee, which stated that the late Rev. Thomas Warren, of Morton Hall, Worcestershire, by his will and the codicil thereto, bequeathed to the Mayor and Corporation of Birmingham a collection of paintings, seventy-two in number, to be deposited in the Midland Institute, and exhibited at all times to the inhabitants and visitors gratuitously, during such hours as the Institute should be open to the public. The bequest, however, was made upon the express condition that the whole of the paintings should be kept together in a room or place within the Midland Institute, to be specially set apart for the purpose, and be so arranged as to form one separate and entire collection, to be called the "Warren Collection." The will further provided that in case the paintings should not be so kept together, or be separated for one calendar month (except for the periods during which the room was under repair), or should not be distinguished by the name of the "Warren Collection," the bequest should be forfeited and the pictures should revert to the testator's residuary estate. The testator also bequeathed to the Mayor and Corporation a large cabinet and sarcophagus in his library, together with the books contained therein, on similar terms and with similar provisions as to forfeiture to those contained in the bequest of the paintings, but subject in other respects to rules and regulations to be framed by the committee or other governing body of the Institute. The collection of pictures had been inspected by several members of the committee, and they having reported that it was not suitable for exhibition in the Art Gallery, the committee communicated with the residuary legatee with the view of obtaining his consent to such a modification of the conditions attached to the bequest as would permit of the acceptance of the pictures by the Council for the purpose of being exhibited at Aston Hall. That endeavour having failed, the committee recommended the Council to decline the bequest of pictures.

This recommendation was ultimately agreed to.

THE STOCKWELL-GREEN BUILDING AGITATION.

WITHIN the past week or ten days the question with respect to building upon Stockwell-green has assumed an entirely new phase, and it now appears that the demand made for the land, by the alleged freeholder,—originally 4,000*l.*, next 8,000*l.*, and now finally said to be 12,000*l.*,—has led to Chancery proceedings, which may ultimately result in establishing the fact that Mr. Abbott, who sold the ground to Mr. Honey for building purposes, had, after all, no legal right to do so, and if so, that Mr. Honey's title is consequently bad. Should this eventually turn out to be the true state of affairs, the despoiling of the Green, which has been in progress during the last few weeks, may prove a serious matter for those responsible for it. It appears that the work of dismantling going forward at the early part of last week caused such an amount of irritation amongst the inhabitants as to have almost led to a breach of the peace. This was during the cutting down and removal of two of the finest trees on the Green, and the clearing away of a considerable portion of the turf.

On Saturday last the case came before the Master of the Rolls, on an application for an injunction in the suit of "Hammerton *v.* Honey," when the Master of the Rolls, upon an *ex parte* statement, granted an *interim* injunction restraining the defendant, the lord of the manor, from building upon or enclosing the Green. The effect of this judicial order is, that the Green must not further be disturbed until the case is legally argued on both sides, which will not take place before the middle of January, when the Chancery Court again sits in Hilary Term.

COMPENSATION?

JOHNSON *v.* THE GUARDIANS OF ST. GEORGE'S UNION.—SHERIFFS' COURT.

THIS was a compensation claim, in respect to the Cornwall Arms, a beershop of some twenty years' standing, situated No. 337, Fulham-road, with stables in the rear, the land being required for the enlargement of the workhouse of St. George's Union.

Mr. Sergeant Parry and Mr. Bidder, Q.C., were for the claimant; Mr. Hawkins, Q.C., and Mr. A. L. Smith represented the Guardians of the Union.

The premises having been inspected by the jury, a number of witnesses were called on both sides. For the claimant, Mr. McClymont, of the firm of Corbett & McClymont, who have built some thousand houses in the neighbourhood, stated that his firm would willingly give 2,000*l.* for the property, and would expect to make a profit out of it.

It appeared rather amusing to us, in the cross-examination, that the counsel for the Union should try perseveringly to make Mr. McClymont, the jury, and himself, believe that he (Mr. McClymont) knew nothing whatever about the value of land or of building operations in general.

Mr. Henry Godwin (G. & H. Godwin) valued the property at 2,375*l.*, making a point of the scarcity of stable accommodation in the neighbourhood. Mr. Bushill valued it at 2,220*l.*; Mr.

l'Anson, 2,156*l.*; Mr. Finlaison, 2,200*l.* These amounts included compensation for a rental of 12*l.* per annum, given by Mr. Smith, the advertising agent, for the use of the flank wall. Mr. Smith gave evidence that he would gladly pay that rental as long as he had the opportunity. For the Union, Mr. Chadwick put the value at 1,210*l.*, taking it, as we understood, as an unsecured ground-rent, ignoring the erection on the land; Mr. Castle, at 1,460*l.*; Mr. Lovejoy, 1,375*l.* The jury, after consulting about a quarter of an hour, assessed the compensation at 1,850*l.*

The oftener we see compensation cases for compulsory sale of property settled with the aid of counsel learned in their craft, the stronger becomes our conviction that the method is entirely wrong. In the face of Mr. McClymont's *bona fide* offer, and of an offer made, within our own knowledge, by a second would-be purchaser, the owner in this case was, to all intents and purposes, legally robbed of 150*l.* and more.

CABMEN'S SHELTER MOVEMENT AT LEEDS.

A COMMODIOUS shelter for cabmen, with stove for cooking and other fittings, has been opened by a committee of gentlemen for the Leeds cabmen, near the Town-hall, by permission of the Corporation. The cabmen, who pay 1d. per day for the use of the shelter from ten a.m. to nine p.m., have spoken very favourably of its usefulness, particularly during wet or frosty weather. Mr. John H. Thorp, of Leeds, is the builder.

Cabmen's shelters have been opened at Edinburgh, Liverpool, Manchester, Birmingham, Leeds, Coventry, Southport, and Derby; and there appears to be no reason why all our cabstands should not, in time, be provided with such necessary resting-places.

There are no such shelters in London owing to legal restrictions, but these must give way in suitable situations if proper steps be adopted by the friends of cabmen.

EXPLOSIONS.

Explosion of Molten Metal at Crewe.—An explosion occurred at the Crewe Steel works of the London and North Western Railway Company, on the 5th inst., by which four men were more or less seriously burnt. They were engaged in casting Bessemer steel, and were running the molten metal from the heavy iron ladle into moulds. Unfortunately, inside one of the moulds was a quantity of sand, which caused the hot fluid to explode with a roar like thunder. The fiery molten particles were scattered in all directions, severely burning almost everybody in the Bessemer pit. Four of the men within the radius of the exploded molten metal were severely injured, and were taken to the company's hospital.

Alarming Gas Explosion at New Swindon.—An explosion took place on the 11th inst., at the New Swindon Gasworks; the pipe connecting the purifier with the gasometer became choked with gas tar, and the manager, Mr. Jervis, and two or three men went to remove the obstruction. They removed the cap of the pipe, apparently oblivious of the fact that a gas jet was burning near. A volume of gas rushed out and became ignited, causing an explosion which knocked down the men, blew out the doors and windows, and set fire to the place. The works are situated near houses of the artisan class, and a panic ensued. The gas was shut off, and the Wiltshire and Berkshire Canal running near, an abundance of water was obtained, and the fire and gas extinguished, but not until the flames were within 2 ft. of the gasometer full of gas, which must have exploded had the fire reached it. The alarm in the town was also great.

Gas Explosion at Birmingham.—An explosion of gas occurred in Great Lister-street, Birmingham, on the 9th inst. For some time water had escaped from the main in the street and washed the earth away. The sinking of the earth caused a gaspipe to break, and a large quantity of gas accumulated. This gas by some means became ignited, and an explosion followed. The windows of the houses facing the street were broken, and the roadway was upheaved for some yards. Fortunately no one was seriously injured.

A Light Again!—A fortnight ago, an explosion of gas took place at Mr. Baldwin's, Victoria-street, Temple, Bristol. A short time previously Mr. Baldwin smelt an escape of gas, and on going to a store-room at the top of the house, in company with his wife, and taking a light with them, an explosion took place, blowing the window out, the door off its hinges, and Mrs. Baldwin into the staircase. Fortunately, she was but slightly injured, and the general damage done was not much.

Explosion of Gas at Sunderland.—A somewhat serious explosion of gas occurred on the 12th instant at Bell's public-house, at the corner of Bridge-street and West Wear-street. The workmen of the Sunderland Gas Company were engaged laying new piping in connexion with the bar, and, in consequence of the communication with the main being disturbed for the purposes of their work, the gas had escaped and filled the cellar. Shortly before noon the men were working in it when a labourer unfortunately struck a match, the result being an explosion of an extensive nature. The person in charge of the bar over the cellar was injured, and some half-dozen persons who were on the premises at the time were thrown down. The building sustained considerable damage, one of the windows of the bar being blown out, while both the roof and the floor were raised several inches.

ACCIDENTS.

Bournemouth.—On Friday, the 11th inst., Mr. Horsey was blown with several rods of brickwork and some scaffolding from the top of a house in Tiverton-terrace, and severely injured, especially in the head.

Death of a Man from Sewer Gas at Widnes.—On Tuesday, 15th, an inquest was held touching the death of a man named Michael Duffy, from gas inhaled in a sewer at Widnes, on the previous Friday afternoon. The deceased was a labourer, thirty-nine years old, and on the previous Friday was engaged with another man, named James Seed, in making a connexion with the main sewer in Church-street, Widnes. Having made a hole in the sewer, and feeling a quantity of foul air coming from it they took every precaution they could. In the afternoon Seed was in the hole, which was about 8 ft. deep, fixing the pipes in the sewer, and deceased was at the top. Seed fell in the hole, and on deceased going to his assistance he was caught by the foul air, and fell down also. Assistance was at once procured, and deceased was got out. Mr. Hilles, surgeon, administered an emetic to both men. Seed soon came round, but deceased remained unconscious and was carried home (a distance of about two miles), where he died about three hours afterwards. The jury returned a verdict of "Accidental death;" but strongly censured the Widnes Local Board for allowing Church-street to be for a considerable time in a disgraceful condition.

Angers.—The roof of the Market-hall of this town fell in on the 16th inst., through the excessive weight of snow that had collected upon it. Several persons were killed or injured.

Bad Air.—A labourer named Crompton, and George Cross, engine tenter, have been suffocated at the Eccleshill Ironworks, Darwen, and several other men had narrow escapes. A workman lost a drill in the engine-house, and Crompton went below the foundations for it. He could not return, and in trying to save him Cross lost his own life. Two or three men had to be pulled out by ropes, quite exhausted. The poisonous gas is supposed to have come from slags.

FIRES.

IT is remarkable that fires of a most extensive kind have lately been prevalent among cotton and other mills and manufactories, some of which we have chronicled, and property to an almost incalculable value has been sacrificed. In spite of all the precautions which most large establishments provide, some discrepancy takes place,—shavings are left lying carelessly about where repairs are taking place, or the waste oily and turpentine tow and rags used in cleaning are discarded, and left to fester till the terrible match or pipe-light is thoughtlessly cast into the midst, to create a blaze as soon as the workpeople leave. Then, again, water is seldom at hand to quench the first outbreak, which is the very essence of prevention. At Reading, the water at night, when its service is most likely to be suddenly demanded, it is the practice to shut off from the mains, and damage to the amount of thousands of pounds is the result. We again record some disastrous losses, the causes of which, as usual, are reported as unaccountable. In the meantime, independently of the pecuniary loss, numerous workpeople are thrown out of employment, and the battle of poverty and inclemency of the weather has to be fought with double patience and perseverance.

Cotton Mill burned at Glasgow.—Early on Tuesday, the 15th inst., an alarming fire occurred in a cotton-spinning mill in Bridgeton, Glasgow, belonging to Messrs. John Houldsworth & Co. The premises covered a very large area, and the buildings of the mill proper, which are four stories in height, were situated near to the Corporation Gasworks. The fire raged for several hours. The mill, which had recently been fitted with new machinery, was almost completely destroyed. Great fear was for a time apprehended lest the fire should communicate with the gasworks, and the gas in a large gasometer close to the mill was conducted to another further removed from the conflagration. The damage to the building and plant is estimated at about 20,000*l.*, and is covered by insurance. Upwards of 250 persons, mostly women, were employed at the works.

Great Fire at Blackburn.—The cotton-spinning mill of Messrs. Eccles, Sherrock, Brothers, & Co., Union-street, Darwen, was burnt down on the 18th inst. The fire occurred shortly before twelve o'clock, and in half an hour the building was completely enveloped in flames. Great fears were entertained for the safety of the adjoining cottage property, and people removed their goods. The damage cannot be less than 20,000*l.*

Destructive Fire at Reading.—On the 19th inst., a fire was discovered in the fitting-room of the ironworks, Claversham-road, Reading, to the north of the railway station. The watchman having rung the bell to give the alarm, fixed the company's hose, but unfortunately no water could be obtained, the local authorities having for some time shut off the water at night from the mains. The consequence was that the whole roof of the building (100 ft. by 25 ft.) was in a blaze in a few minutes, and the adjoining shops, the smiths' and switch shops, took fire. It was upwards of an hour before water could be obtained from the waterworks, and in that time the flames had a complete hold of all the shops. In two hours the works were destroyed, the bare walls only standing. The damage amounts to several thousand pounds.

Extensive Fire at Oxford.—On the 16th inst., a fire was discovered in the premises adjoining the Randolph Hotel and Collins's Carriage Factory, which speedily communicated to other buildings. Owing to the high wind and scarcity of water, the flames raged with great fury for several hours. Collins's Coach Factory, including large workshops and numerous carriages, Banner's dyer's shop, Mr. Roddes's premises, Mr. Hewitt's grocery shop and warehouses, and Mr. Williams's baker's shop in Friar's-entry were all completely destroyed. The damage is estimated at 20,000*l.* to 30,000*l.*; cause of fire unknown. Heavy snow fell the whole time. Many valuable vehicles, the judge's carriage included, are destroyed, as also are the workmen's tools. The property is only partially insured.

Another Mill Burnt Down.—Messrs. Pickard, Preestly, & Co.'s cloth-mill at Highburn, Castleford, near Leeds, was almost entirely destroyed by fire on the 17th inst. Damage estimated at 5,000*l.*

DONCASTER NEW WATERWORKS.

THE foundation-stone of the embankment of the reservoir at Hooton Brook, in connexion with the Doncaster new waterworks, was laid on the 16th inst., by the mayor of Doncaster (Mr. J. Clark), the mayor of Rotherham, and the other members of the two corporations being present.

The main reservoir is to be in Silverwood Valley, on the stream dividing the estates of Mr. Bosville and Mrs. Fullerton. The two smaller reservoirs will be as tributaries of Hooton Brook, above Ravenfield Fish Ponds. The following brooks and streams will be brought into the reservoirs:—Hooton Park Brook, three tributaries of Hooton Brook and Silverwood Brook. The whole of the reservoir will cover an area 56 acres. The large reservoir will contain 270,000,000 gallons of water, and the two smaller ones over 22,000,000 gallons, so that there will be a total storage of 292,000,000 gallons of water. The average rainfall of the district is 27 in., and taking the lowest estimate, that in extraordinary dry seasons it would not be possible to collect more than 6½ in., they would be able to have a supply of 476,000,000 gallons. It is estimated

that when these reservoirs are filled, the town will be in a condition to be supplied with water for 250 days. It is expected that the work will only cost the ratepayers at a rate of 2*d.* 13s. per head. The three reservoirs will all be connected by a 4-ft. conduit. They are distant about eight miles and a half from Doncaster, and the water will be conducted to the town in large cast-iron pipes. The cost, according to the tender, will be 42,538*l.* 15s. 10d., independently of a separate tender for the erection of an engineer's office and other buildings, upon which over 800*l.* have been spent. Mr. B. S. Brundell, of Doncaster, is the engineer. The contractor is Mr. James Thane, of Maryport; Mr. Morton is the contractor's agent; and the builders for the engineer's residence are Messrs. T. & C. Anelay, of Doncaster. The reservoirs are to be finished by January, 1877.

THE CITY OF LONDON CEMETERY.

At the meeting of the Commissioners of Sewers last week, the Sanitary Committee recommended that the new works at the City of London Cemetery, at Ilford, be executed at an estimated cost of 2,664*l.*, for taking in additional ground. The committee stated, that in setting out the ground it would be sufficient to enclose about 13 acres for the present, instead of 25 acres, as already sanctioned. It was remarked by Mr. Cox that 2,664*l.* appeared to be a very large sum for enclosing the 13 acres of land, and he thought this would be nearer the mark. In answer to 200*l.* objection, the engineer stated that the work was done in the simplest manner possible, but the drainage and the road-making had to be executed, as well as the mere enclosing. Mr. Bedford remarked that he hoped the enclosure of these 13 acres would not be in opposition to a recent decision of the Master of the Rolls. The recommendation of the committee was adopted.

THE "MONARCH" MORTISING MACHINE.

Messrs. F. W. Reynolds & Co., of Southwark-street, have just introduced a new mortising machine, which they call the "Monarch," combining the most recent improvements with several advantages peculiar to itself. The raising and lowering of the brackets, in which the chisel-carrying spindle works, is effected by a new arrangement holding them quite firm while working in different depths of stuff; the spindle consequently is not liable to fall suddenly, as it does in some machines, damaging the chisel. Additional power is gained by the direct action of the lever handle, and the friction is reduced to a minimum. The machine is mounted on an extra strong stand, and will, we should think, soon come into general use among the trade. The same firm have, we understand, made several improvements in their imperial hand-power saw-bench, and they have a new patent combined circular and band saw sawing-machine nearly ready for delivery.

THE ARCHITECTS AND ENGINEERS.

The following letter was addressed to the secretary of the Institute of Architects with reference to the subject discussed at the last meeting:—

Dear Sir,—I am afraid I may be unable to accept the kind invitation of the Council to attend next Monday's meeting. I should, however, have but a very few words to say on the *Quarterly* article, which seems to me entirely unpractical, and, indeed, puerile.

I cannot but think that the hope of English architecture lies in common sense rather than in such sentimental antiquarianism,—in common sense and good taste regulated by the great principle that *good architecture is decorated construction, and bad architecture is constructed decoration.*

A civil engineer with a cultivated taste and the general education of a gentleman, seems to me far more nearly the ideal architect for our time than the building-foreman of the *Quarterly* reviewer.

If the Institute of Architects could be joined to the Institution of Civil Engineers, it would be, in my opinion, the beginning of a very good hope for both professions; and I heartily wish that some proposal to try and bring this about could be made at your meeting on Monday.

Do you think you could get the suggestion put forward?

James Knowles.

PROMOTERS' LIABILITY TO RECOUP RATES.

Sir,—Your correspondent appears to be misled by the newspaper reports, necessarily condensed, of the case of Lambeth *v.* The Metropolitan Board of Works. The promoters are only liable for the amount which the parish would have been entitled to for rates had the property not been pulled down or put out of occupation, and only until the new work is completed, when it may be re-assessed at its then true value. In reference to the Embankment itself, I apprehend there will be little or no value for assessment to the rates; but new buildings on the surplus lands will be assessed from time to time to the tenants as they become occupied. The judgment given in this case does not affect private building enterprise, in which the act of pulling down does not revive the liability to pay rates for a house previously exempt because unoccupied, but only concerns the promoters of such public undertakings as require an Act of Parliament to enable the promoters to acquire lands by compulsory powers and by agreement. These powers are conferred by incorporating with the special Act the Lands Clauses Consolidation Act, section cxxxiii. of which says:—

"And be it enacted that if the promoters of the undertaking become possessed by virtue of this or the special Act, or any Act incorporated therewith, of any lands charged with the land tax, or liable to be assessed to the poors' rate, they shall from time to time, *until the works shall be completed*, and assessed to such land tax or poors' rate, be liable to make good the deficiency in the several assessments for land tax and poors' rate, by reason of such lands having been taken or used for the purposes of the works, and such deficiency shall be computed according to the rental at which such lands with any buildings thereon were valued or rated at the time of the passing of the special Act; and on demand of such deficiency the promoters of the undertaking, or their treasurer, shall pay all such deficiencies to the collector of the said assessments respectively."

The general point of dispute is not as respecting the amount of this deficiency, but with regard to when the works are completed, as to which see "Whitchurch *v.* East London Railway Company," *Law Times* (House of Lords), vol. 30, N.S. 413.

Arthur Harston.

THE COST OF FENCING.

The following is a list of tenders sent in for fencing in a portion of the Manor Park Cemetery, London, at per rod:—

	5 ft. 6 in. high.	4 ft. high.
Rivett	£2 12 6	£1 19 6
France	2 9 0	2 2 6
Astell & Sons	1 18 6	1 9 6
Beadle, Brothers	1 17 6	1 10 0
Turner & Son	1 17 0	1 5 0
Hayward	1 15 0	1 7 6
May & Son (too late)	1 15 0	1 6 6
Stenning & Son	1 14 6	1 6 6
Wainwright & Co.	1 13 0	1 8 0
Stone (accepted)	1 6 11	1 0 10

IMPORTANT TO TIMBER MERCHANTS AND BUILDERS.

At the Lewes County Court, on the 15th inst., in the case of Edward Chatfield (timber and coal merchant, Lewes) *v.* John Chappell (London and Steyning), a claim was made for 4*l.* 17s. 3d., the value of a number of oak scantlings, which had been supplied to the defendant along with a lot of others, and returned as being of inferior quality.

George Head, foreman in Mr. Chatfield's mill, deposed that he examined the whole of the wood, some 2,000 pieces, valued at something over 100*l.*, before it was sent off, last June. The scantlings were fit for the purpose for which they were supplied,—for window sills. They were good average samples.

William Smith, foreman in the plaintiff's yard, said the wood was a good sample, sound and square. He had seen lots of sap put into sills.

Mr. Frank Davey, of Lewes, builder, had seen the scantlings which had been returned, and his opinion was that, although they had been exposed to the sun since they were returned, as they had been left lying at the Railway Goods Station, they were now worth what they were originally sold at, 3s. 3d. per foot.

Mr. Goodman said his defence was that the wood was utterly unsuitable for the purpose for which it was supplied. He called

Mr. Thomas Lawrence, who said he was sole manager for Mr. Chappell, at the Steyning works. He remembered the oak scantlings coming in. They were sappy and shaky, and utterly useless.

By the Judge—When the order is given for timber of any particular length the rule in the trade is that it shall be free from sap, knots, and not shaky.

Mr. Holmes, timber merchant, of Steyning, said the oak scantlings that had been returned were knotty, shaky, and sappy, and were not fit for new work.

His Honour said that he was sure that the matter had only been disputed as one of principle. He was rather surprised that the learned advocate for the defendant had not put the question, "Would the architect of the building have passed the wood?" He should have put that question had he been the advocate, and he had no doubt the architect would not have passed it. Therefore, he found for the defendant, with costs.

WHAT IS A HOUSE?

In the Court of Chancery last week, the case of Harvie *v.* The South Devon Railway Company was heard. This was an appeal by the company from a decree of Vice Chancellor Malins. Mr. Harvie was the owner of the residue of a ninety-nine years' lease of two plots of ground, on part of which a continuous building was raised, which was occupied as two semi-detached villas. The remainder of each plot consisted of a garden in front and at the back, and offices connected with the house, while a brick wall separated the gardens. The dwellings were fitted up internally for the occupation of two families and always had been so occupied, and the plaintiff purchased the leasehold interest at two different times. The only internal partition, however, between the two dwellings consisted of a party wall, carried up to the ceiling of the upper story, and at the back by a stone-nogged partition about 4 in. thick, to the height of the first floor, and above that to the ceiling of the upper floor, one of lath and plaster. The building consisted of only two storeys, and above the ceiling of the upper floor the slope of the roof was open throughout, and it was possible to pass inside from one dwelling to the other. The railway company served the plaintiff with notice to treat for part of the garden of No. 1, whereupon the plaintiff served them with a counter notice to take the whole of the buildings and gardens of Nos. 1 and 2. Mr. Harvie filed the present bill asking for a declaration that the company were bound to take all the premises. Vice-Chancellor Malins granted the prayer of the plaintiff, being of opinion that the two tenements formed only one house, and the railway company were bound to take all the property included in the plaintiff's notice. Upon appeal by the defendants, the Lord Chancellor held that the buildings must be considered two distinct houses, and that the company were only bound to take No. 1, and that, therefore, the bill must be dismissed with costs. Lord Justice James concurred.

DAMPERS FOR MUSICAL BELLS.

In a work on Clock and Watch Making, written many years ago by Thomas Reid, is the following paragraph under "Clock Chimes, &c.":—

"The bells in this kind of music may be sounding at the time that a succeeding note is struck and sounding too, which may not be so pleasant to a very nice ear. This can be prevented by having a double set of hammers, and having every tune pinned twice over on the barrel, one set of the hammers having the heads of buff leather, or having a brass head with a piece of cloth sewed over it. These, when they strike the bell, will damp the sound of the note which is last struck. The buff hammer should fall on the bell, to be damped at the same instant that the brass hammer strikes the succeeding note on its bell. This improvement, however, must greatly increase the expense on such a clock; but the effect of buff or cloth hammers is so striking that the additional price ought not to be grudged."

Whether any machine was ever constructed on Reid's system I know not. But I understand that certain respected mechanicians have lately invented a superior apparatus with dampers, for which they have obtained a patent.

Now, something of the kind has long been wanted for house clocks which play tunes on bells. But let it be most distinctly understood that tower bells require no dampers whatever; for, when their sounds have issued from the openings in the sides of the building they spread themselves in the air and ultimately reach the auditor with precision in subdued and pleasing tones. This I endeavoured to show in a contribution headed "Bells and Carillons, or Continental Chimes," which appeared in the *Builder* for the 11th of September, 1869. In the same article I suggested what led Dr. Burney to entertain and publish his erroneous notions on the subject of Carillons, which so many persons have copied from time to time. I would here remark that no competent person has ever himself examined the matter and published the result, so far as I know. We may thus account for the learned doctor's mistakes being handed down from one to another.

I have said that tower bells require no dampers whatever. Let me now add that the sounds of well-tuned bells (without dampers) as given out from a tower form "a music which nature adopts and makes her own, as the winds play with it." Such is aërial music wafted to and fro—crescendo and diminuendo—increasing and dying away with a delightful effect.

Thomas Walesby.

MONUMENTAL.

Statue of the Late Mr. Cubitt.—A colossal statue of the late Mr. Thomas Cubitt, the well-known builder, who was mainly instrumental in the development of the neighbourhoods of Pimlico and Euston, is in the course of erection, and will surmount a white marble fountain in the centre of Euston-square. This square, one of the largest of the London proprietary squares, has, from a want of unanimity amongst the ticket-holders, been for a length of time an eyesore to the neighbourhood. Now, however, a vigorous effort is being made to render it worthy of the monument; the old shrubs are being up-

rooted, such of the trees as are suffering from decay have been cut down, and the entire area raised to a height of 9 ft. The grounds are being laid our in grass-plots and flower-beds, planted with flowering shrubs and evergreens, and intersected with ornamental walks; and instead of the small and broken railing a noble sweep of bronzed and gilded rails will be substituted. The estimated cost is over 2,000*l.*

Statue of the late Mr. Laird, M.P.—At a meeting held in Liverpool on Wednesday, the 16th, a committee was appointed to assist in the raising of a fund for the erection of a statue to the late Mr. John Laird, M.P. for Birkenhead.

A Statue of the late Earl of Clarendon, by Mr. John Bell, the sculptor of the group of "America" at the Albert Memorial, and of the statues of Falkland and Walpole in St. Stephen's Hall, has been erected in the hall of the Foreign Office upon a pedestal designed by Sir G. G. Scott.

Hans Christian Andersen.—A monument is to be erected to Hans Christian Andersen in the garden of the palace of Rosenau, near Copenhagen.

STOVE COMPETITION.

SOCIETY OF ARTS.

IT will be remembered that a gentleman, who did not wish to have his name disclosed, volunteered to give the sum of 500*l.* with a view to encourage the development of improved means for the economic use of fuel in private dwellings. On referring the proposal to the Council of the Society of Arts, premiums to that amount were offered for various improved systems. In reply there were 204 articles sent in for competition, and after consideration 107 were retained for the purpose of being tested. This having been done the Committee reported, and the conclusion the Council have arrived at is,—"That while giving full credit to the invention and efforts of the competitors for the care and labour which they have bestowed upon their contrivances, the Council nevertheless are unable to award any prize." We greatly regret this decision; it seems to us a mistake of considerable magnitude.

DISMISSAL WITHOUT NOTICE.

A JUDGMENT of importance has been given by Sheriff Spens, of Hamilton, at the Glasgow Small Debt Court, in an action at the instance of William Graham, against John Miller & Co., calenderers, Cochran-street, for the sum of 2*l.* 10s., in lieu of the fortnight's notice which it was alleged the pursuer was entitled to have received before his dismissal from defenders' employment. The pursuer stated that when he was engaged by defenders' foreman, he was told that he would continue to receive work in the place while the pressure of trade continued, but having been shifted to another department, he had been ten weeks in the defenders' service when he received notice of his instant dismissal, to which he demurred at the time, remarking that he thought the defenders had become bound to give him due warning. On behalf of the defenders, the foreman stated that the pursuer was recognised during the whole time he was in their employment simply as a jobber, whom the defenders were entitled to dismiss at any time. A witness for pursuer stated that there was a rule well known in the trade that when a jobber had been in a place six weeks he became entitled to the privileges of an ordinary workman, one of which was that a fortnight's warning must be given before dismissal. The Sheriff, after the case had been fully discussed, said he was inclined to think that the pursuer was entitled to decree, as it had been proved that, according to the custom of the trade, the relation of the parties changed before the expiry of the ten weeks, a judgment against which the defenders reserved right to appeal.

DOINGS AT NEW SHOREHAM CHURCH.

NEW Shoreham Church is a singularly interesting specimen of Transition-Norman architecture, and deserves the most reverent care. Very strong representations have reached us as to the ignorant and damaging manner in which certain works there are being executed. Some time ago Mr. Arthur Loader showed the parties interested in the matter the error they were committing. He now writes,—

"This really beautiful specimen of Transition Norman architecture, whose details it has been my pleasure in leisure moments to sketch and measure, has been before mutilated in places, and it is positively grievous to note the way in which not only this but other ancient buildings are treated, so that I have long since got to disbelieve in the operation being attempted at all, and I am sorry to say that the Institute of British Architects do not perform the functions of such a society in not watching with more sacred vigilance the doings towards the whole of our marvellously grand ancient buildings scattered over England."

If Mr. Loader in the present case had pointed to the Sussex Archæological Society, instead of the Institute of Architects, he would have pointed to the right delinquent. This once active and useful society appears to have fallen asleep.

NEW SHOREHAM CHURCH AND THE "EMANCIPATED WORKMAN."

SIR,—Letters have appeared relating to New Shoreham Church, and the work done there under the name of "restoration" by a "local bricklayer." I, having visited the church, can entirely corroborate what has been said as to the scraping and the patching of the stonework with cement, the removal of the ancient fragments of the tracery of the wheel-window, and other mutilations. The east end indeed presents a very grievous appearance; but I trust the mischief may end here. I have felt it my duty, having been in 1866 appointed with Mr. Slater to carry out my father's designs for the rebuilding of the nave and restoration of the choir, to at once write to the gentleman who, I was told, had decided on the "local bricklayer," and who, I may mention, was the enthusiastic secretary of the restoration committee.

I have also written to those who have the right of protecting and keeping up the fabric of the church and chancel, and I have reason to believe that careful attention is being paid to the facts of the case by them.

Having gone to Shoreham full of the recent discussion at the Institute on the question of "Working Man *v.* Architect,"—the work at Shoreham done by the local "inspired and emancipated workman," "relieved from the bondage that professionalism inflicts upon" him, but perhaps hardly "gloriously impelled," made me feel the impossibility of agreeing in the idea of his "genus" being "the only real hope of English architecture"!

R. HERBERT CARPENTER.

Books Received.

Hints to Young Engineers. By J. W. WILSON, C.E. London: Spon.

A USEFUL *brochure* by Mr. J. W. Wilson, C.E., Principal of the Crystal Palace School of Practical Engineering, has been published by Messrs. Spon, of Charing-cross. The value of the practical advice, of which the little work contains much, is not impaired by the pleasant vein of dry humour that crops up at intervals. It is very readable, and thoroughly practical, such, in a word, as few readers, professional or other, can fail to enjoy and profit by.

VARIORUM.

The *Pictorial World Christmas Number* shows an advance. Besides numerous engravings, it contains stories by Hain Friswell, Mortimer Collins, Shirley Hibberd, Walter Thornbury, Thomas Archer, George Manville Fenn, Henry S. Leigh, &c., and consists of thirty-two pages, in a coloured cover.——Sprague's "Pocket Diary for Architects and Surveyors" is really a capital little book, the tables, calculations, and memoranda being especially useful.——Calvert's "Mechanics' Almanac and Workshop Companion" includes much information for a few pence.——"Everybody's Year Book," containing something for everybody all the year round (Wyman & Sons), is now an established publication, and the issue for 1875 is certainly equal to any that has come before.

Miscellanea.

The Metropolitan Board of Works Budget for 1875.—At the meeting of the Board, on the 18th inst., Mr. Lloyd brought forward the estimate of the sums required to be raised for the year 1875, and the rateable annual value of property for the same year. He said the gross indebtedness of the Board amounted to 12,156,379*l.* 17s. 6d., which, after making various deductions, such as money borrowed from other bodies and Government stock, would leave the net year's debt at 9,514,659*l.* 14s. 11d. The result of the whole was simply that they would have to ask the metropolis for a rate, to make up the amount they had to pay in the succeeding year equal to 5½d., instead of 4½d., in the pound. The Board had not been able to please every one, yet the work they had done was great and important. He hoped the rate would never exceed 6d. in the pound, and for that 6d. they would be able to pay off their debt in half a century, by a fraction, and also help the metropolis in the same manner as they had done in the past.

Rejection of the Proposal for a Free Library for Bethnal-green.—The proposal to establish a free library for the parish of Bethnal-green, agreed upon at a meeting of the ratepayers held a fortnight ago, was discussed at great length by the Bethnal-green vestry on Thursday, the 17th. Mr. Voss, the vestry-clerk, reported the resolution of the ratepayers asking the vestry to take the necessary steps for the carrying out of the project; upon which Mr. Collins moved,—"That this vestry is of opinion that the resolution passed by the meeting of ratepayers held at the Abbey-street School-room, on the 7th of December inst., for the purpose of determining whether the Free Libraries Act should be adopted in this parish, which resolution is now presented to the vestry, with the signature of the chairman of the meeting attached, is invalid, because the chairman refused to grant a poll when it was demanded by nine ratepayers; and that the vestry therefore declines to act upon the resolution." The resolution was carried by twenty-seven votes recorded for it, and with eight against it. The effect of this resolution is consequently to negative the determination arrived at by the ratepayers' meeting.

Widening of Brompton-road.—At the usual meeting of the Kensington vestry, on Wednesday, the 16th inst., Mr. Harding, the clerk, read a memorial, signed by 177 residents of the neighbourhood of Old Brompton-road, calling the attention of the vestry to the narrowness of the road extending from the Gloucester-road to Haywood's-place. A letter was read from Mr. Hay, the owner of several houses adjoining the road, stating his willingness to give up certain portions of the gardens in front of his property, for the purposes of improvement, for the sum of 50*l.* Messrs. Corbett & McClymont, of the Redcliffe estate, expressed their desire to forward the carrying out of this improvement, and offered to give over that part of the building land forming a portion of the boundary, for the purpose of widening the road. Mr. Cunningham Glyn moved the reference of the subject to the Metropolitan Board of Works. Mr. Shapcott, in seconding the motion expressed his regret that where the need of improvements had been so apparent for years, they should be delayed until the value of property had so greatly increased. The motion, after further discussion, was agreed to.

New Vestry Hall for St. Clement Danes. Last week, the memorial stone of the new Vestry Hall for the parish of St. Clement Danes, now in course of erection by Messrs. Thorne & Co., of Chelsea, from the designs of Messrs. Codogan & Butler, was laid. The new building is intended to replace the old Vestry Hall, removed to make room for the new Law Courts, and its estimated outside cost (7,000*l.*) will be paid out of the 10,000*l.* received as compensation from Government. It will be in the Italian style, of Portland stone, relieved with columns of polished Aberdeen granite, the main front comprising two stories and a basement looking on to Houghton-street. The Vestry-room, on the first floor, will measure 38 ft. 6 in. by 28 ft. 6 in. As Houghton-street forms part of the line of the proposed prolongation of Norfolk-street through Clare Market, and thence by Little Queen-street into Holborn, the building has been outwardly designed with a view to render it worthy of its future rather than its present surroundings. The general foreman for Messrs. Thorne is Mr. R. Old, and the clerk of works, Mr. Woodhall.

The London School Board.—At the weekly meeting of the School Board for London, on the 16th inst., Sir Charles Reed presiding, the quarterly reports and returns were, after some discussion, received. The Rev. John Rodgers, who presented them, stated that the Board possessed 181 schools, with accommodation for 89,000 children, that the names of 93,000 children were on the roll, that the highest number in attendance on any one day during the quarter had been 81,492, and that the average attendance had been 66,187.

Election of Inspectors of Nuisances.—The Sanitary Committee of the Camberwell Vestry reported, on the 15th inst., that they had received twenty-five applications for the office of inspector of nuisances, and they submitted the following six for the election of two therefrom: Samuel Powell Fisher, James Comfort, Thomas Drinkwater, Thomas Lightfoot, Richard Frost, and Thomas Clarke. A ballot was taken, and the election fell upon the first two named.

Northern Architectural Association.—An ordinary meeting of the above Association was held on Wednesday evening, the 16th inst., in the Old Castle, Newcastle. The chair was occupied by the president of the society, Mr. M. Thompson. Mr. Frank Rich, Mr. W. L. Newcombe, and Mr. J. H. Robinson were nominated associates. The President read a paper on "The Present Position of the Society," for which he was awarded a vote of thanks. The following gentlemen were elected to fill the various offices of the Association for the ensuing year:—President, Mr. John Johnson; vice-president, Mr. T. Prosser; treasurer, Mr. W. H. Dunn; secretary, Mr. T. Oliver; solicitor, Mr. G. W. Hodge; committee: Mr. M. Thompson, Mr. Gibson Kyle, Mr. J. Hogg, Mr. W. Peachy, Mr. G. Connell, Mr. F. Charlton, Mr. J. W. Shotton, and Mr. T. Rea. The customary votes of thanks brought the meeting to a close.

A Horrocks Scholarship.—The sum required for the erection of a tablet in Westminster Abbey to the memory of the Liverpool astronomer, Horrocks, has been fully subscribed. The *Times* expresses "a hope that those who have carried the good work so far, and have thereby earned the thanks of all interested in science, will permit an extension of their modest,—we think too modest,—programme." The extension proposed is the foundation of a Horrocks Scholarship at Cambridge, his old university, or at Owen's College, in his native county. "Such a scholarship would insure his name being brought each year into remembrance until it became a household word, and it might be so managed as largely to promote the study of that science to which Horrocks's life was devoted."

The Exhibition at Manchester of Appliances for the Economy of Labour.—The preparations for the Exhibition at Manchester in March, under the auspices of the Society for Promoting Scientific Industry, of appliances for the economy of labour, are being pushed forward, and entries for a large number of exhibits have been received, many of the leading engineers in Lancashire and other places being well represented. Encouraged by the success which attended the previous exhibition of appliances for the economical consumption of coal, the Society have in the present case very largely extended the scope of their operations, and the exhibition building will be twice the dimensions of the one erected in Peel Park at the beginning of the present year. The site has not yet been definitely decided upon.

The Proposed College at Dundee.—A public meeting of the influential inhabitants of Dundee, called by the Town Council, was held in the Town-hall on Wednesday, December 16, for the purpose of considering the proposal to erect a college in Dundee. The following resolutions were unanimously adopted:—That having respect to the importance of the advancement of literature and science along with the growth of the population and wealth of Dundee, it is desirable to establish a college for the promotion of the higher branches of education in the town and district. That a committee be appointed to devise a scheme for the establishment of a college in Dundee, to confer with the University of St. Andrews with a view to the incorporation of the proposed college, by affiliation or otherwise, with that university, and with power to take all necessary steps to carry out the objects contemplated.

Slough Sewage.—The Local Board of Health are now taking steps to complete the sewerage of this town, and to provide for the disposal of the sewage. The accomplishment of these objects would probably promote the building of residences along the lines of the new roads lately completed on Lord Harewood's estate. Last week, several of the members of the Board, accompanied by Mr. R. B. Grantham, the Engineer, examined the district and neighbourhood for the purpose of inspecting the sites which have from time to time been proposed as suitable for sewage farms.

Opening of a Fever Hospital at Darlington.—On Thursday, the 17th inst., the mayor of Darlington, Mr. H. Fell Pease, declared open a large fever hospital, which had been erected on the outskirts of that town, at a cost of 9,225*l*. The site is in Yarm-lane, and not above a few hundred yards from the Darlington Union Workhouse, which stands on the main road opposite, and is also a modern erection. The new hospital is built from the designs of Mr. G. G. Hoskins, of Darlington.

Traffic of Kensington-road.—The members of the council of the Albert Hall, accompanied by Major Donelly, R.E., secretary, had an interview on the 14th inst. with the First Commissioner of Works to request him to take some measures to relieve the pressure of traffic in the Kensington-road, on the occasion of special entertainments at the Hall by utilising the roads within Hyde Park and Kensington-gardens.

Profits of the Patent Law.—At a meeting of the Society of Arts in London, last week, the Patent Laws were discussed. It was stated that the Government had reaped a clear profit of 900,000*l*. from patents since 1862, and it was contended that out of that sum an exhibition of patents ought to be provided, and substantial encouragement given to the patentees.

Albert Hall Concerts.—The daily concerts are to be abandoned at the end of the year, two in the week being given instead. We foresaw and foretold that the original arrangement could not be successfully carried out. The weather, moreover, has been greatly against the undertaking.

School Board Erections.—Builders at least have reason to praise the Scotch School Act, the School Boards of Abernethy and Kincardine, Duthil and Rothiemurchus, Fordyce, Fetteresso, Forglen, Kininmonth, Marnoch, Oyne, and Rothes all propose to erect new schoolhouses or teachers' houses, or large additions thereto.

Death of Another District Surveyor.—The death is announced of Mr. Richard Bell, architect, in his sixty-fifth year. Mr. Bell was the District Surveyor of St. George's, Hanover-square, and at one time had a considerable practice as an architect, especially in the City of London.

Death of a Russian Architect.—John Ivanovitch Gornostaïev, professor of architecture at the Russian Academy of the Fine Arts, died on the 11th inst. He was a distinguished architect, and had designed many of the finest of the Russian public buildings.

Inquiry into the Belgian Iron Trade.—The South Staffordshire ironworkers have selected Mr. John Kane, of Darlington, to visit Belgium, and inquire into the iron and coal trades of that country, as they affect the same industries in England.

A Palace for the Empress of Russia.—The health of the Empress of Russia has so greatly improved at San Remo that she has purchased a piece of land there, and is going to commence building a palace at once. It is to be completed by next winter.

A Brick Merchant's Bequest.—By the will of the late Mr. Howard Haywood, a retired brick and tile manufacturer, the town of Burslem comes into possession of 30,000*l*. for charitable purposes.

A Church Struck by Lightning.—During the storm on Saturday, the 15th inst, at Jersey, the steeple of St. Mary's Church was struck by lightning, and a portion knocked down. Two beacons on the coast were destroyed.

TENDERS

For the hotel to be erected over the terminus of the London, Chatham, and Dover Railway, on the Holborn Viaduct. Mr. Lewis H. Isaacs, architect. Quantities supplied by Mr. L. C. Riddett:—

Gammon & Sons	75,500 0 0
Holland & Hannen	74,580 0 0
Peto, Brothers	74,369 0 0
Browne & Robinson	73,580 0 0
Chappell	73,458 0 0
Lucas, Brothers	73,120 0 0
Trollope & Sons	71,343 0 0
Webster (accepted)	70,000 0 0

For finishing two houses at Cologne-road, Wandsworth. Mr. William Bradbear, architect:—

Kiddle	£822 0 0
Harris	750 0 0
Prebble & Morley	670 0 0
Steel (accepted)	652 0 0

For erecting villa residence at Steele-road, Haverstock Hill, for Mr. A. E. Finch. Mr. R. Groom, architect:—

Burstall (accepted)	£1,900 0 0

For the erection of offices (from ground-floor level) corner of Rood-lane and Eastcheap, for Messrs. Dickinson & Akroyd. Mr. F. Chambers, architect. Quantities supplied by Mr. G. P. Raggett:—

Conder	£15,610 0 0
Ashby & Horner	15,540 0 0
Holland & Hannen	14,812 0 0
Trollope & Son	14,657 0 0
Coleman	14,150 0 0
Macey	13,982 0 0
Browne & Robinson	13,780 0 0
Elkington (accepted)	13,333 0 0

For alterations and additions to a warehouse, Jewin-crescent. Messrs. Herbert Ford & R. L. Hesketh, jun., architects:—

Merritt & Ashby	£1,977 0 0
Sykes	1,854 0 0
Ashby & Sons	1,850 0 0
Simpson & Sons	1,800 0 0
Lark	1,774 0 0
Nightingale	1,666 0 0
Crabb	1,550 0 0

For London and County Bank, Hackney (Contract No. 2). Mr. Fred. Chancellor, architect. Quantities by Messrs. Curtis & Sons:—

High (accepted)	£5,100 0 0

For alterations and repairs to the Star Tavern, 105, City-road, London. Messrs. Bird & Walters, architects. Quantities supplied:—

	Shop Fronts in Wood.	Shop Fronts in Portland Stone.
Gammon & Sons	£1,550	£1,575
Laurance	1,530	1,611
Thompson & Smith	1,411	1,511
Anley	1,367	1,444
Newman & Mann	1,366	1,508
Ebbs & Sons	1,294	1,356
Mark	1,285	1,374
Brown	1,260	1,350
Williams & Son*	1,247	1,317

* Accepted.

TO CORRESPONDENTS.

H. J. jun. (cancelled, having appeared elsewhere).—G. W. S., Australia (shall have attention).—H. F. (we cannot advise it).—S. & A. (next week).—T. F. (next week).—Floating Bath (in type).—Etiquette (in type).—T. D. (thanks).—Mr. C.—W. G. S.—H. T.—S.—T. R.—Old Subscriber.—D.—H. S.—Mr. G.—G. P.—H. W. R.—R. W. S.—H. W. S.—A. W.—F. S. W.—N. W.—H. W.—R. H. C.

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